Alaska Resource Data File, Skagway quadrangle, Alaska

By Thomas C. Crafford [1]

Open-File Report 01-193

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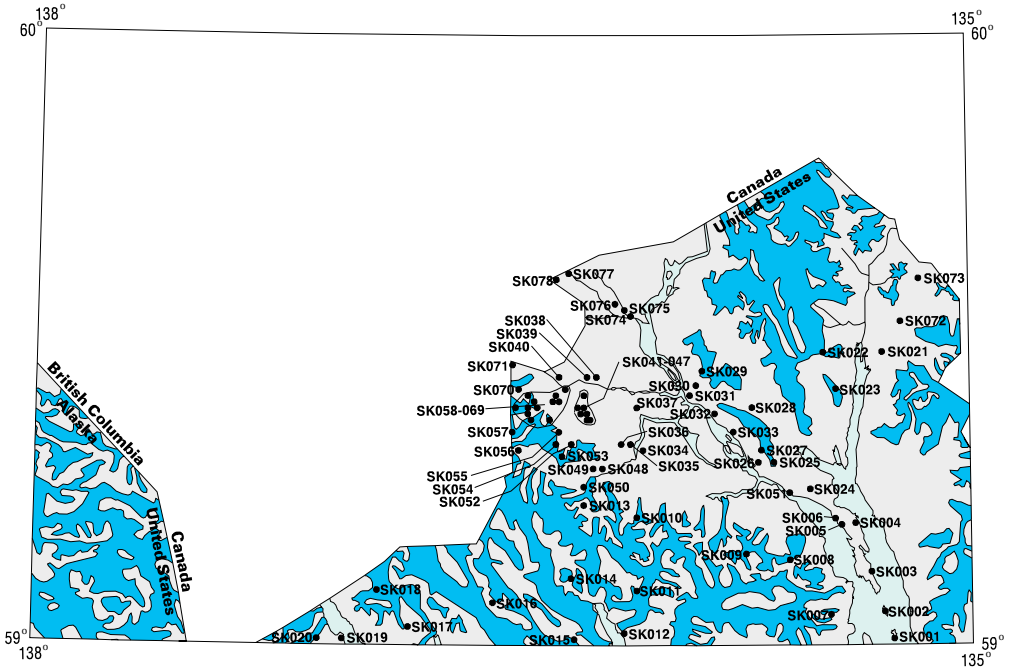
Alaska Resource Data File

Skagway quadrangle

Descriptions of the mineral occurrences shown on the accompanying figure follow. See U.S. Geological Survey (1996) for a description of the information content of each field in the records. The data presented here are maintained as part of a statewide database on mines, prospects and mineral occurrences throughout Alaska.



Distribution of mineral occurrences in the Skagway 1:250,000-scale quadrangle, Alaska

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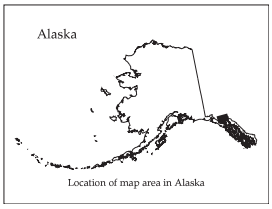

OPEN-FILE REPORT 01–193

Site name(s): Unnamed (near the south end of Kataguni Island)

Site type: Occurrence

ARDF no.: SK001

Latitude: 59.01 **Quadrangle:** SK A-1

Longitude: 135.25

Location description and accuracy:

This occurrence is in beach cliffs on the western coast of Kataguni Island about 0.2 miles from the southern tip of the island. It is shown as localities 48 to 52 in Still (1988).

Commodities:

Main: Ag, Au, Cu, Zn

Other:

Ore minerals: Bornite, chalcopyrite, malachite, pyrite, sphalerite

Gangue minerals: Calcite, epidote, quartz

Geologic description:

Still (1988) indicates that, 'Mineralization is located in metabasalt sea cliffs up to 50 feet high that contain numerous narrow shear zones at various orientations. Some of the shears are silicified and contain copper or copper-zinc mineralization. Samples collected from these 0.2- to 1.4-foot-thick shear-controlled veins contain up to 2.54 ppm gold, 22.5 ppm silver, 6.9% copper, and 2.14% zinc.'

Plafker, Hudson, and Silberling (1979) and Plafker and Hudson (1980) note that on the Chilkat Peninsula the same metabasalts are vesicular and/or amygdaloidal and that well-developed pillow textures are locally present. Based in part on fossil evidence that supports a Late Triassic (Karnian) age, they suggest that the metavolcanics and carbonates may correlate with similar rocks of the Wrangellia terrane. The age of the mineralization is not well established, but can be no older than the Late Triassic age of the host rocks. If the shearing and mineralization are both related to the nearby Chilkat Fault, then the age of the mineralization is probably Tertiary or younger as most movement on the Chilkat Fault has been post-Mesozoic (Lanphere, 1978).

Alteration:

Epidotization, silicification.

Age of mineralization:

The age of the mineralization is not well established, but must be no older than the Late

Triassic (Karnian) age of the metabasalts that host the deposit (Plafker, Hudson and Silberling, 1979; Plafker and Hudson, 1980). If the shearing and mineralization are both related to the nearby Chatham Strait Fault, then the age of the mineralization is probably Tertiary or younger as most movement on the Chilkat Fault has been post-Mesozoic (Lanphere, 1978).

Deposit model:
Au-Ag-Cu-Zn in shear zones in metabasalt.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
This occurrence is within the Chilkat Islands, State Marine Park.

References:
Lanphere, 1978; Plafker, Hudson and Silberling, 1979; Plafker and Hudson, 1980; Still, 1988; Still, 1991 (BOM, v. 2, Sec. A); Still and others, 1991.

Primary reference: Still, 1988

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (near the north end of Shikosi Island)

Site type: Occurrence

ARDF no.: SK002

Latitude: 59.04 **Quadrangle:** SK A-1

Longitude: 135.27

Location description and accuracy:
This occurrence is about 0.15 miles south of the narrow northern tip of Shikosi Island.

Commodities:

Main: Ag, Cu, Zn

Other: Au

Ore minerals: Chalcopyrite

Gangue minerals: Epidote, quartz

Geologic description:
Still and others (1991) describe this occurrence as, 'A narrow epidotized and silicified shear zone that contains chalcopyrite and chalcopyrite hosted in metabasalt.' Samples contained up to 0.05 ppm gold, 6.7 ppm silver, 3,000 ppm zinc, and 2.74% copper. This zone is similar to the unnamed occurrence (SK001) to the south on Kataguni Island. Plafker, Hudson, and Silberling (1979) and Plafker and Hudson (1980) note that on the Chilkat Peninsula the same metabasalts are vesicular and/or amygdaloidal and that well-developed pillow textures are locally present. Based in part on fossil evidence that supports a Late Triassic (Karnian) age, they suggest that the metavolcanics and carbonates may correlate with similar rocks of the Wrangellia terrane. The age of the mineralization is not well established, but can be no older than the Late Triassic age of the host rocks. If the structure that localizes the mineralization is related to the Chilkat Fault, then the age of the mineralization is probably Tertiary or younger as most movement on the Chilkat Fault has been post-Mesozoic (Lanphere, 1978).

Alteration:
Epidotization, silicification.

Age of mineralization:
The age of this occurrence is not well established, but can be no older than the Late Triassic age of the host rocks (Plafker, Hudson and Silberling, 1979; Plafker and Hudson, 1980). If the structure that localizes the mineralization is related to the Chatham Strait

Fault, then the age of the mineralization is probably Tertiary or younger as most movement on the Chilkat Fault has been post-Mesozoic (Lanphere, 1978).

Deposit model:
Very little information. Base and precious metal mineralization localized along a shear zone in metabasalt.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
This occurrence is within the Chilkat Islands, State Marine Park.

References:
Lanphere, 1978; Plafker, Hudson and Silberling, 1979; Plafker and Hudson, 1980; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still and others, 1991 (BOM, v. 2, sec. A)

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (on southern Chilkat Peninsula)

Site type: Occurrence

ARDF no.: SK003

Latitude: 59.12 **Quadrangle:** SK A-1

Longitude: 135.32

Location description and accuracy:

This occurrence is at the head of a small bay on the eastern shore of the Chilkat Peninsula about 2.3 miles north of its southern tip. It is about 0.9 miles, S60E from VABM 1450 'Kal'. It is shown as number 41 on sheet 1 of Still and others (1991).

Commodities:

Main: Ag, Au, Cu, Zn

Other: As, Pb, W

Ore minerals: Chalcopyrite, malachite, pyrite, sphalerite

Gangue minerals: Quartz

Geologic description:

Still and others (1991) indicate that this occurrence is located in metabasalt along a north-northwest-striking lineament that is likely a splay off the fault that runs through Flat Bay. Brecciated sphalerite-bearing basalt boulders up to 1 foot by 2 foot in size contained up to 6.23 ppm gold, 13 ppm silver, 27% zinc, 2,600 ppm copper, 13 ppm tungsten, and 50 ppm arsenic. Iron-stained metabasalt rubble crop with chalcopyrite, pyrite, and malachite in a quartz knot contained 0.446 ppm gold, 220 ppm zinc, and 8,400 ppm copper. A stream sediment sample 0.8 miles north of this site and along the same lineament contained 0.024 ppm gold, 1.5 ppm silver, 3,000 ppm zinc, 1,150 ppm copper, and 590 ppm lead. Plafker, Hudson, and Silberling (1979) and Plafker and Hudson (1980) note that metabasalts on the Chilkat Peninsula are vesicular and/or amygdaloidal and that well-developed pillow textures are locally present. Based in part on fossil evidence that supports a Late Triassic (Karnian) age, they suggest that the metavolcanics and carbonates may correlate with similar rocks of the Wrangellia terrane. The age of the mineralization is not well established, but can be no older than the Late Triassic age of the host rocks. If the structure that localizes the mineralization is related to the nearby Chilkat Fault, then the age of the mineralization is probably Tertiary or younger as most movement on the Chilkat Fault has been post-Mesozoic (Lanphere, 1978).

Alteration:

Age of mineralization:

The age of this occurrence is not well established, but can be no older than the Late Triassic age of the host rocks (Plafker, Hudson and Silberling, 1979; Plafker and Hudson, 1980). If the structure that localize the mineralization is related to the Chatham Strait Fault, then the age of the mineralization is probably Tertiary or younger as most movement on the Chilkat Fault has been post-Mesozoic (Lanphere, 1978).

Deposit model:

Base and precious metal mineralization localized along a lineament (shear zone?) in metabasalt. The metals have probably been derived from the host metabasalts.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

This occurrence is within the Chilkat State Park.

References:

Lanphere, 1978; Plafker, Hudson and Silberling, 1979; Plafker and Hudson, 1980; Gilbert and others, 1991; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (near Battery Point on the Chilkat Peninsula)

Site type: Occurrence

ARDF no.: SK004

Latitude: 59.20 **Quadrangle:** SK A-1

Longitude: 135.37

Location description and accuracy:

This occurrence is at an elevation of approximately 300 feet on the east side of the the Chilkat Peninsula about 0.5 miles south of Battery Point. It corresponds to location 19 of Cobb (1972 [MF 424]); sample site BD473 of Winkler and MacKevett, (1970); and number 38 of Still and others (1991).

Commodities:

Main: Cu

Other: Au

Ore minerals: Chalcopyrite, malachite

Gangue minerals: Epidote

Geologic description:

Winkler and MacKevett (1970) describe a sample from this occurrence as a, 'Chalcopyrite-epidote-rich greenstone/amphibolite (?),' which contains 300 ppm Cu. Still (1988) says this occurrence is, 'where a 100-foot-high metabasalt cliff has a few patches of malachite stain.' Samples contained up to 0.51 ppm gold and 2,650 ppm copper. Plafker, Hudson, and Silberling (1979) and Plafker and Hudson (1980) note that metabasalts on the Chilkat Peninsula are vesicular and/or amygdaloidal and that well-developed pillow textures are locally present. Based in part on fossil evidence that supports a Late Triassic (Karnian) age, they suggest that the metavolcanics and carbonates may correlate with similar rocks of the Wrangellia terrane. This site is located near an ultramafic body which is probably 108-109 m.y. old based on potassium-argon ages reported by MacKevett and others (1974) for pyroxenite at Battery Point . The age of the mineralization is not well established, but can be no older than the Late Triassic age of the host rocks. It may be related to the ultramafic body whose age is 108-109 m.y.

Alteration:

Epidotization.

Age of mineralization:

The age of the mineralization is not well established. It can be no older than the Late Triassic age of the host rocks and may be related to the 108-109 m.y. old ultramafic body nearby.

Deposit model:

There is little information for assigning a deposit model. The mineralization may be related to elevated copper levels in the metabasalts or to the nearby ultramafic body.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: No

Site Status: Probably inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

This occurrence is within the Chilkat State Park.

References:

Winkler and MacKevett, 1970; MacKevett and others, 1974; Cobb, 1972 (MF 424); Cobb, 1978 (OF 78-316); Plafker, Hudson and Silberling, 1979; Plafker and Hudson, 1980; Still, 1988; Gilbert and others, 1991; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still, 1988

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Road Cut II

Site type: Prospect

ARDF no.: SK005

Latitude: 59.19 **Quadrangle:** SK A-2

Longitude: 135.43

Location description and accuracy:

This prospect occurs along the Mud Bay Road between mileposts 4 and 5 (from Haines). It is approximately 1 mile south of the Road Cut prospect (SK006) along the Mud Bay Road (Still, 1988). It is in the SE1/4, section 11, T. 31 S., R. 59 E. of the Copper River Meridian.

Commodities:

Main: Cu, Zn

Other: Ag, Au

Ore minerals: Chalcopyrite, pyrite, sphalerite

Gangue minerals: Epidote

Geologic description:

According to Still (1988), spotty gold-copper-zinc mineralization extends for at least a mile, between mileposts 4 and 5 on the Mud Bay Road. Mineralization consists of epidote-altered metabasalt and epidote bands up to 2 feet thick that contain pyrite, chalcopyrite, and locally sphalerite. Samples contain up to 0.21 ppm gold, 2.5 ppm silver, 0.69% copper, and 1.83% zinc. This mineralization may be continuous with the Road Cut prospect (SK006). From the descriptions of Still (1988), it appears that mineralization at both prospects occurs along fault and shear zones that are subsidiary shears and splits of the Chilkat fault. If so, then the age of the mineralization is probably Tertiary or younger- since most movement along the Chilkat Fault has probably been post-Mesozoic (Lanphere, 1978). Plafker, Hudson and Silberling (1979) and Plafker and Hudson (1980) cite fossil evidence for a Late Triassic (Karnian) age for the metabasalts on the Chilkat Peninsula. The age of a nearby ultramafic body is probably 108-109 m.y. based on potassium-argon ages from a pyroxenite at Battery Point (MacKevett and others, 1974).

Alteration:

Epidotization.

Age of mineralization:

The age is not well established. It can be no older than the Late Triassic age of the metabasalt that hosts the prospect (Plafker, Hudson and Silberling, 1979; Plafker and Hudson, 1980). If the structures that localize the mineralization are related to the Chilkat Fault, then the age of the mineralization is probably Tertiary or younger as most movement on the Chilkat Fault has been post-Mesozoic (Lanphere, 1978).

Deposit model:

Base metal sulfides with some precious metal values along a shear zone in metabasalt.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

In 1986-1987 the U.S. Bureau of Mines made shallow excavations and sampled the bedrock and rubble. They also ran two 440-foot-long magnetometer lines across the beach and road and up the escarpment that forms the eastern edge of the Chilkat Fault near milepost 5 of the Mud Bay Road. A prominent magnetic low indicates a fault zone that strikes N37W about 35 feet east of the Mud Bay road (Still, 1988). An approximately 30-foot-long adit in metabasalt is located several hundred feet southeast of milepost 4 on the Mud Bay road. No mineralization was seen in the adit, but a band of metabasalt adjacent to the adit contains chalcopyrite (Still, 1988).

Production notes:

Reserves:

Additional comments:

This prospect is within a mile of the Chilkat State Park.

References:

Winkler and MacKevett, 1970; MacKevett and others, 1974; Lanphere, 1978; Plafker, Hudson and Silberling, 1979; Plafker and Hudson, 1980; Still, 1988; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still, 1988

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Road Cut

Site type: Prospect

ARDF no.: SK006

Latitude: 59.20 **Quadrangle:** SK A-2

Longitude: 135.45

Location description and accuracy:
This prospect is on the west side of the Chilkat Peninsula, 3.1 miles south of Haines on the Mud Bay Road as determined by mileposts.

Commodities:

Main: Au, Cu

Other: Ag

Ore minerals: Chalcopyrite, pyrite

Gangue minerals: Calcite, quartz

Geologic description:
The following description is summarized from Still (1988). The prospect is in a thick metabasalt sequence within 1/4 mile of an ultramafic intrusive. Mineralization is fault-controlled and is in a fault zone, the Road Cut fault that is up to 40 feet thick, strikes N35-40W, and dips steeply to the northeast. The fault zone consists of silicified, brecciated, and sheared metabasalt and locally sheared and brecciated diorite. At the surface, a higher grade zone outcrops over a strike length of 227 feet. Its eastern (upper) margin includes an 0.2- to 3.5-foot-thick quartz-calcite zone with up to 75% combined pyrite and chalcopyrite. Samples from this quartz-calcite zone contained from 0.8 to 32.26 ppm gold. The remainder of the width of the better mineralized zone consists of a shear zone of silicified metabasalt with 0.06% to 3% chalcopyrite, up to 5% pyrite, and gold values of 0.07 to 0.14 ppm. The higher-grade zone at the surface occurs within a 590-foot-long section of lower grade mineralization that is defined by drill holes and extends to a depth of at least 125 feet. This lower grade zone, which is open along strike to the north and south and down dip, ranges in width from 12 to 40 feet and consists of silicified, locally pyritized, brecciated metabasalt and, locally, brecciated diorite. Gold and copper values average less than 0.48 ppm gold and 268 ppm copper. From the descriptions of Still (1988) it appears that mineralization at the Road Cut and Road Cut II (SK005) prospects occurs along fault and shear zones that are subsidiary shears and splits to the nearby Chilkat fault. If so, the age of the mineralization is probably Tertiary or younger since most movement along the Chilkat Fault has probably been post-Mesozoic (Lanphere, 1978).

Plafker, Hudson and Silberling (1979) and Plafker and Hudson (1980) cite fossil evidence for a Late Triassic (Karnian) age for the metabasalts on the Chilkat Peninsula. The nearby ultramafic body is probably 108-109 m.y. old based on potassium-argon ages from a pyroxenite at Battery Point (MacKevett and others, 1974).

A sample of a copper-stained zone in greenstone collected a short distance due west of the Road Cut Prospect on the western shore of the Chilkat Peninsula by Winkler and MacKevett (1970) contained more than 9,999 ppm copper.

Alteration:

Calcification, pyritization, silicification.

Age of mineralization:

The age is not well established. It can be no older than the Late Triassic metabasalts that host the deposit (Plafker, Hudson and Silberling, 1979; Plafker and Hudson, 1980). If the structures that localize the mineralization are related to the Chilkat Fault, then the age of the mineralization is probably Tertiary or youner as most movement on the Chilkat Fault has been post-Mesozoic (Lanphere, 1978).

Deposit model:

Copper sulfides with some precious metal values along a shear zone in metabasalt.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

Work by the U.S. Bureau of Mines in 1986 and 1987 included geologic mapping and sampling; 13 geophysical survey lines (magnetics, radiometrics and electromagnetics) totaling 7,600 feet in length; 7 diamond drill holes totaling 980 feet in length; and 6 trenches up to 6 feet deep and 20 feet long that were dug with mechanized equipment. Several geophysical anomalies that are subparallel to the deposit were drilled approximately 70 and 120 feet east of the surface mineralization but did not intersect significant mineralization (Still, 1988).

Production notes:

Reserves:

Still (1988) divides the mineralized area of the prospect into two zones, a higher grade gold-copper zone and a lower grade 'DDH' zone. He estimates a near-surface resource of 700 tons of material with 0.09 ounce of gold per ton, 0.17 ounce of silver per ton, and 0.8% copper in the gold-copper zone. A slightly deeper resource on this zone is estimated to consist of 4,729 tons of material with 0.02 ounces of gold per ton and 0.1% copper. He estimates a resource of 3 million tons of material with 0.008 ounces of gold per ton in the DDH zone.

Additional comments:

This prospect is within a mile of the Chilkat State Park.

References:

Winkler and MacKevett, 1970; MacKevett and others, 1974; Lanphere, 1978; Plafker, Hudson and Silberling, 1979; Plafker and Hudson, 1980; Adler, 1986; Kruger, 1986; Adler and Adler, 1987; Adler and Adler, 1988; Still, 1988; Gilbert and others, 1991; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still, 1988

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Hayes

Site type: Occurrence

ARDF no.: SK007

Latitude: 59.05 **Quadrangle:** SK A-2

Longitude: 135.45

Location description and accuracy:

This occurrence is near the southeast corner of section 35, T. 32 S., R. 59 E, of the Copper River Meridian. It is at an elevation of about 1,600 feet about 0.2 miles southeast of hill '2015'. The location is from pages 3 and 4 of Herbert and Race (1965) and is considered accurate. This location apparently corresponds to location 9 in Cobb (1972 [MF 424] which is located, probably less accurately, approximately 0.5 miles to the southeast.

Commodities:

Main: Cu, Fe

Other:

Ore minerals: Chalcopyrite, hematite, magnetite

Gangue minerals:

Geologic description:

The following description is summarized from Herbert and Race, 1965. Rocks in the area are metasediments, including marble and gneiss, that strike northwesterly; there is also some east-west faulting. The prospect is located on a steep cliff at the head of a talus slope that contains float of magnetite in marble and chalcopyrite with hematite in an impure schistose marble that has been partially altered to skarn. The deposit is considered to be low-grade mineralization in metamorphic rocks close to an east-west fault. Only stream sediment sample values are reported. Copper values in the vicinity of the prospect do not exceed 90 ppm copper, but 3 samples to the south varied between 120 and 130 ppm copper. The age of the mineralization is not well established, but is probably Cretaceous based on the age of the nearby intrusive rocks (Gilbert , 1988).

Alteration:

Limestone partly altered to skarn (Herbert and Race, 1965).

Age of mineralization:

The age is not well established but the deposit is probably Cretaceous based on the age of nearby intrusive rocks (Gilbert , 1988).

Deposit model:
Skarn; disseminated, contact metasomatic (Cox and Singer, 1986; model 18d or 18b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
18d or 18b

Production Status: None

Site Status: Probably inactive

Workings/exploration:
Very little information is available.

Production notes:

Reserves:

Additional comments:

References:
Herbert and Race, 1964; Herbert and Race, 1965; Berg and Cobb, 1967; Cobb, 1972 (MF 424); Cobb, 1978 (OF 78-316); Brew and Ford, 1985; Gilbert, 1988.

Primary reference: Herbert and Race, 1965

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (north of Rainbow Glacier)

Site type: Occurrence

ARDF no.: SK008

Latitude: 59.14 **Quadrangle:** SK A-2

Longitude: 135.58

Location description and accuracy:

This occurrence is at an elevation of about 3,300 feet, 1.3 miles S44W from survey marker 'Bow' on the west shore of Chilkat Inlet. It is in the SW1/4, section 33, T. 31 S., R. 59 E. of the Copper River Meridian. It corresponds to location 93 in Gilbert (1988) which is the approximate center of a group of sample locations with anomalously high metal values.

Commodities:

Main: Ag, Cu

Other: Ba, Co

Ore minerals: Chalcopyrite, pyrite, pyrrhotite

Gangue minerals: Quartz

Geologic description:

Gilbert (1988) describes numerous samples within an area of about 1/2 mile in diameter as being quartz schist, felsic schist, or silicified rock with varying amounts of pyrrhotite, pyrite, and some chalcopyrite. Sample values are as high as 6.3 ppm silver, 1,300 ppm copper, 215 ppm cobalt, and 1,600 ppm barium. The host rocks are mapped by Gilbert (1988) as Paleozoic volcanics. His descriptions of felsic schist and quartz schist suggest a Paleozoic age for the mineralization if the rocks are volcanic. Alternatively, the felsic and quartz schists may be due to silicification and/or alteration related to nearby Cretaceous granodiorite intrusives.

Alteration:

Silicification?

Age of mineralization:

Unknown. If the felsic schist that hosts the deposit is volcanic, then the mineralization is probably Paleozoic. If the felsic schists are alteration zones peripheral to an intrusive, then the mineralization is probably related to the nearby Cretaceous intrusive rocks (Gilbert, 1988).

Deposit model:
Unknown. Felsic schists are suggestive of a possible volcanogenic massive sulfide or, perhaps, an alteration zone peripheral to an intrusive.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:
Gilbert, 1988.

Primary reference: Gilbert, 1988

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (in the northern Chilkat Range)

Site type: Occurrence

ARDF no.: SK009

Latitude: 59.15 **Quadrangle:** SK A-2

Longitude: 135.72

Location description and accuracy:

This occurrence is at an elevation of about 5,000 feet about 3.7 miles, S87W from triangulation station 'Bow' on the west side of Chilkat Inlet. It is in the SW1/4, section 25, T. 31 S., R. 58 E. of the Copper River Meridian and is in a narrow septum of rock between two unnamed ice fields. The location corresponds to location 68 of Gilbert (1988).

Commodities:

Main: Ag, Cu

Other: Co

Ore minerals: Chalcopyrite, pyrite, pyrrhotite

Gangue minerals: Quartz

Geologic description:

Gilbert (1988) collected four rock samples described as, 'skarn with pyrrhotite (60%) and chalcopyrite', 'gossan with pyrrhotite', 'black schist with pyrrhotite (20%)', and 'quartz with pyrite in shear'. The samples contain up to 4.6 ppm silver, 5,950 ppm copper, and 95 ppm cobalt. The host rocks are mafic Paleozoic metavolcanics and metasediments that include argillaceous marble. Cretaceous medium-grained hornblende diorite and foliated granodiorite are nearby (Gilbert, 1988). The mineralization is probably the same age as the nearby Cretaceous intrusive rocks.

Alteration:

Skarn.

Age of mineralization:

The age is inferred to be Cretaceous based upon the Cretaceous age of nearby intrusive rocks (Gilbert, 1988).

Deposit model:

Copper skarn? (Cox and Singer, 1986: model 18b?)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
18b?

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:
Gilbert, 1988.

Primary reference: Gilbert, 1988

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (north of Glacier Bay Monument)

Site type: Occurrence

ARDF no.: SK010

Latitude: 59.21 **Quadrangle:** SK A-3

Longitude: 136.07

Location description and accuracy:

This occurrence is at an elevation of approximately 4,000 feet. It is about 0.5 miles north of Peak 6725 on the northern boundary of Glacier Bay National Monument and 6.4 miles, N74W from the summit of Mount Krause. It is shown as location 10 of Cobb (1972 [MF 424]) and location BD 548 of Winkler and MacKevett (1970).

Commodities:

Main: Mo

Other:

Ore minerals: Molybdenite

Gangue minerals:

Geologic description:

Samples BD 548A and BD 548B of Winkler and MacKevett (1970) are described as 'Biotite granodiorite (?) with molybdenite disseminations'. Sample BD 548B contained 15 ppm Mo. The Cretaceous age of the host intrusive (Gilbert, 1988) establishes a maximum age for the deposit.

Alteration:

Age of mineralization:

The age is Cretaceous or younger, based upon the age of the host intrusive (Gilbert, 1988).

Deposit model:

This is only an occurrence and there is very little information on it. The mineralization may be related to a porphyry copper system. The description from Winkler and MacKevett (1970) appears to be too mafic an association for a Climax type Mo deposit.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: No

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:

Winkler and MacKevett, 1970; Cobb, 1972 (MF 424); Berg, 1984; Gilbert, 1988.

Primary reference: Winkler and MacKevett, 1970

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (on western edge of McBride Glacier)

Site type: Occurrence

ARDF no.: SK011

Latitude: 59.09 **Quadrangle:** SK A-3

Longitude: 136.07

Location description and accuracy:

This occurrence is in the Glacier Bay National Park and Preserve on the western edge of the McBride Glacier at an elevation of approximately 2000 feet. (Note: the text in Brew and others (1978) notes this occurrence at an elevation of 2500 feet, but they plotted it where the 2,000-foot contour line intersects the western edge of the McBride Glacier) It is near the center of section 13, T. 32 S., R. 55 E. of the Copper River Meridian. The approximate location is shown as number 7 in Cobb (1972 [MF 424]) and is more accurately located as number 77 on Plate III of Brew and others (1978).

Commodities:

Main: Au, Cu

Other: Ag, Mo, Zn

Ore minerals: Arsenopyrite, chalcopyrite, pyrite, pyrrhotite

Gangue minerals:

Geologic description:

The following description is summarized from Brew and others (1978). Arsenopyrite, chalcopyrite, pyrite, pyrrhotite, and traces of gold occur in ankeritic zones near an irregular, interfingered contact that marks a facies change between marble and phyllite. About 10 separate zones are present, each less than 10 feet wide and less than 100 feet long. The zones are copper and iron stained and are conformable to the bedding of the metasediments. One zone forms the hanging wall of 5-foot-wide andesite dike that contains chalcopyrite and pyrite. A 2-foot channel sample across an iron-stained zone in marble contained 0.003 ounce of gold per ton, 13,000 ppm copper, 200 ppm zinc, 15 ppm silver, 7,000 ppm arsenic, 5 ppm molybdenum, and more than 5,000 ppm manganese. Four other samples contained lesser amounts of metals. MacKevett (1971) reported a grab sample of sulfide-bearing rock that contained 0.088 ounce of gold per ton. The metasediments that host the deposit are Permian and Permian(?) in age which establishes a maximum age for the mineralization. Granitic intrusives in the general area are Cretaceous to Tertiary in age (Brew and others, 1978).

Alteration:

Age of mineralization:

Unknown. The Permian and Permian(?) age of the metasedimentary host rocks establishes a maximum age, but the mineralization may be related to nearby Cretaceous or Tertiary granitic intrusives(Brew and others, 1978).

Deposit model:

This is only an occurrence with little available information . Based on the descriptions by Brew and others (1978) it appears to be a skarn or replacement occurrence (Cox and Singer, 1986; models 18b? or 19a?).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

18b?, 19a?

Production Status: None

Site Status: Inactive

Workings/exploration:

Only sampling of outcrops.

Production notes:

Reserves:

Additional comments:

The occurrence is within Glacier Bay National Park and Preserve where mining and prospecting are restricted.

References:

MacKevett and others, 1967; MacKevett and others, 1971; Cobb, 1972 (MF 424); Brew and others, 1978; Cobb, 1981 (OF 81-82A); Cobb, 1981 (OF 81-82B); Berg, 1984.

Primary reference: Brew and others, 1978

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Van Horn

Site type: Prospect

ARDF no.: SK012

Latitude: 59.02 **Quadrangle:** SK A-3

Longitude: 136.11

Location description and accuracy:

This prospect is located at an elevation of about 1,500 feet in Glacier Bay National Park and Preserve on the east side of Muir Inlet near Peak 2124 at the southwestern end of Van Horn Ridge. It is near the center of section 8, T. 33 S., R. 56 E. of the Copper River Meridian. It is shown as location 71 on plate III of Brew and others (1978) and location 11 on plate 1 of MacKevett and others (1971).

Commodities:

Main: Cu, Mo

Other:

Ore minerals:

Gangue minerals:

Geologic description:

Brew and others (1978) describe the prospect as, 'Weakly mineralized iron-stained altered zones in hornfels, shale, and granodiorite. Most of the zones are along faults and are a few feet wide, not persisting along strike.' The hornfels strikes northerly and dip steeply (MacKevett and others, 1971). A composite grab sample of iron-stained shale contained 150 ppm copper and 15 ppm molybdenum (Brew and others,1978). A select sample of an iron-stained shear zone contained 100 ppm copper and 200 ppm molybdenum (MacKevett and others, 1971). The age of the mineralization is probably Cretaceous or younger based upon the Cretaceous age of the intrusive rocks (Brew and others, 1978).

Alteration:

Iron-stained altered zones.

Age of mineralization:

Cretaceous or younger based on the age of the associated intrusive rocks (Brew and others, 1978).

Deposit model:
Weakly mineralized shear zone. There is little information on which to assign a model type.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:
Brew and others (1978) state that 65 claims were staked on the ridge in 1965 and that a few shallow trenches and pits explore some of the mineralized zones.

Production notes:

Reserves:

Additional comments:
The prospect is within Glacier Bay National Park and Preserve where exploration and development are restricted.

References:
MacKevett and others, 1967; MacKevett and others, 1971; Brew and others, 1978; Berg, 1984.

Primary reference: Brew and others, 1978

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (near LeBlondeau Glacier)

Site type: Occurrence

ARDF no.: SK013

Latitude: 59.23 **Quadrangle:** SK A-4

Longitude: 136.24

Location description and accuracy:

This occurrence is at an elevation of about 4,500 feet about 0.5 miles west of the Le-Blondeau Glacier and about 0.8 mile northeast of the boundary of Glacier Bay National Park and Preserve. It is in the approximate center of a group of six locations sampled by Gilbert (1988) in the south-central part of section 25, T. 30 S., R. 54 E. of the Copper River Meridian.

Commodities:

Main: Ag, Cu, Zn

Other: Au

Ore minerals: Chalcopyrite, magnetite, pyrite, pyrrhotite

Gangue minerals: Epidote, quartz

Geologic description:

Gilbert (1988) and Still and others (1991 [BOM, v. 2, Sec. A]) describe this occurrence as, 'a magnetite-chalcopyrite skarn that crops out near a diorite-marble contact.' They note that the skarn contains magnetite lenses up to 10 feet across, with associated grossularite garnet, epidote, and marble. Nearly all of 17 rock samples collected in this area contained substantially elevated levels of copper, silver, and zinc. Values were as high as 8,540 ppm copper, 10.8 ppm silver, 11,500 ppm zinc, 620 ppm cobalt, and 0.17 ppm gold. Brief descriptions of the rock samples refer to chalcopyrite, pyrite, pyrrhotite, and magnetite in association with iron-stained diorite and skarn. The mineralization is probably the same age as the Cretaceous diorite (Gilbert, 1988).

Alteration:

Skarn.

Age of mineralization:

Probably Cretaceous based on the age of the associated diorite (Gilbert, 1988).

Deposit model:

Copper skarn (Cox and Singer, 1986; model 18b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
18b

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:
Gilbert, 1988; Gilbert and others, 1991; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Mount Brock; Mount Brack

Site type: Occurrence

ARDF no.: SK014

Latitude: 59.11 **Quadrangle:** SK A-4

Longitude: 136.28

Location description and accuracy:

This occurrence is in Glacier Bay National Park and Preserve about 0.8 miles northwest of the summit of Mount Brock; it is on a ridgetop at an elevation of approximately 3,900 feet. It corresponds to location 6 of Cobb (1972 [MF424]). A more detailed location is shown in Figure C-67 of Brew and others (1978). Note: Mount Brock is shown on some maps as Mount Brack. Schorr (1991) asserts that the correct name is Mount Brock, named for Canadian geologist R.W. Brock who visited Muir Inlet in 1913.

Commodities:

Main: Ag, Cu, Pb, Zn

Other: Au, Sb

Ore minerals: Arsenopyrite, chalcopyrite, galena, pyrite, sphalerite

Gangue minerals: Ankerite, calcite, quartz

Geologic description:

The following description is summarized from Brew and others (1978).
The prospect consists of hydrothermal quartz-calcite veins 0.1- to 1.8-foot thick that contain chalcopyrite, sphalerite, galena, pyrite, arsenopyrite, and ankerite in Devonian and Permian andesite, graywacke, limestone, hornfels, and siltstone. The veins strike north and dip to the east. Altered zones (presumably altered zones around or between the veins) are sparsely mineralized. The veins contain up to 1.3% copper, 0.9% lead, 4.2% zinc, 0.7% antimony, 70 ppm silver, and traces of gold. The mineralization must be younger than the Permian age of some of the host rocks and is probably the same age as nearby Cretaceous intrusive rocks.

Alteration:

Alteration is mentioned but not described.

Age of mineralization:

No older than Permian based on age of host rocks and probably Cretaceous, based on the age of nearby intrusive rocks (Brew and others, 1978).

Deposit model:
Polymetallic veins (Cox and Singer, 1986; model 22c).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
22c?

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:
According to Brew and others (1978), the individual veins are neither rich enough nor extensive enough to be economic and the veins are not close enough together to be mined as a unit.

Additional comments:
The deposit is within Glacier Bay National Park and Preserve where exploration and development is restricted.

References:
MacKevett and others, 1967; MacKevett and others, 1971; Cobb, 1972 (MF 424); Brew and others, 1978; Cobb, 1981 (OF 81-82A); Berg, 1984; Schorr, 1991; Still, 1991 (BOM, v. 2, sec. B).

Primary reference: Brew and others, 1978

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (on Minnesota Ridge)

Site type: Occurrence

ARDF no.: SK015

Latitude: 59.01 **Quadrangle:** SK A-4

Longitude: 136.27

Location description and accuracy:

This occurrence is at an elevation of approximately 2,900 feet on Minnesota Ridge in Glacier Bay National Park and Preserve. It is in the NE1/4, section 17, T. 33 S., R. 55 E. of the Copper River Meridian. It is shown as location 5 in Cobb (1972 [MF-424]) and in figure C-66 of Brew and others (1978).

Commodities:

Main: Cu

Other: Au

Ore minerals: Chalcopyrite, pyrite

Gangue minerals:

Geologic description:

The following description is summarized from Brew and others (1978).
The northwest portion of Minnesota Ridge consists of locally iron-stained quartz diorite cut by a few andesite dikes. The iron-stained quartz diorite has small amounts of chalcopyrite smeared along tiny fractures. The highest values obtained from nine samples were 490 ppm copper, 30 ppm molybdenum, 0.10 ppm gold, and 0.7 ppm silver. Based on the age of the host intrusion, the mineralization must be Cretaceous or younger in age.

Alteration:

Age of mineralization:

Based on the age of the host intrusion, the mineralization must be Cretaceous or younger in age (Brew, 1978).

Deposit model:

There is too little information to adequately characterize this occurrence.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

This is a very low grade occurrence. The deposit is within Glacier Bay National Park and Preserve where exploration and development is restricted.

References:

MacKevett and others, 1971; Cobb, 1972 (MF 424); Brew and others, 1978; Cobb, 1981 (OF 81-82A); Cobb, 1981 (OF 81-82B).

Primary reference: Brew and others, 1978

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Gable Mountain

Site type: Occurrence

ARDF no.: SK016

Latitude: 59.07 **Quadrangle:** SK A-5

Longitude: 136.53

Location description and accuracy:

This occurrence is in Glacier Bay National Park and Preserve at an elevation of about 4,500 feet; it is on a rugged ridge about 0.6 miles southeast of the summit of Gable Mountain. It is in west-central part of section 29, T. 32 S., R. 53 E. of the Copper River Meridian. This location corresponds to number 75 on Plate 3 of Brew and others (1978). Location 14 on Plate 1 of MacKevett and others (1971) and location 4 of Cobb (1972; MF-424) appear to refer to the same occurrence but are shown approximately 1 mile to the northwest of the summit of Gable Mountain. Because of the discrepancies between different authors regarding the location of this occurrence, it should probably be considered accurate only to within about 1 mile.

Commodities:

Main: Ag, Cu

Other: Mo, W

Ore minerals: Chrysocolla, malachite

Gangue minerals: Quartz

Geologic description:

The following description is summarized from Brew and others (1978).
At site 1 at an elevation of 4,475 feet, there is a 0.7-foot-wide shear zone which has quartz stringers and copper stains. Below the shear zone there is quartz diorite float that has joint coatings of malachite and chrysocolla. Joint coatings of iron sulfide are reported in quartz diorite at a second site 8,000 - 9,000 feet to the southeast (but the plotted location is about 3,000 - 4,000 feet to the southwest). At site 1, a composite grab sample contained 1,000 ppm copper; a channel sample across the 0.7-foot-wide shear zone contained 250 ppm copper and 7 ppm silver. At Site 2, 7 grab samples contained up to 970 ppm copper, 3 ppm silver, 200 ppm molybdenum, and 150 ppm tungsten. Based on the Cretaceous age of the intrusion (Brew and others, 1978), the mineralization must be Cretaceous or younger in age.

Alteration:

Age of mineralization:
The deposit must be Cretaceous or younger in age based on the Cretaceous age of the intrusion that hosts it (Brew and others, 1978).

Deposit model:
There is too little information to assign a model type.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The deposit is within Glacier Bay National Park and Preserve where exploration and development is restricted.

References:
MacKevett and others, 1967; MacKevett and others, 1971; Cobb, 1972 (MF 424); Brew and others, 1978; Cobb, 1978 (OF 78-316); Cobb, 1981 (OF 81-82A); Berg, 1984.

Primary reference: Brew and others, 1978

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (west of Rendu Glacier)

Site type: Occurrence

ARDF no.: SK017

Latitude: 59.03 **Quadrangle:** SK A-5

Longitude: 136.80

Location description and accuracy:

This occurrence is in Glacier Bay National Park and Preserve at an elevation of about 5,000 feet near the top of the steep west face of a ridge west of Rendu Glacier. It is in the SE1/4, section 6, T. 33 S., R. 52 E. of the Copper River Meridian. It corresponds to sample sites 65048 to 65050 on Figure C-44 in Brew and others (1978). Location 3 of Cobb (1972; MF-424), which refers to the 'Rendu Glacier' deposit, is probably the same occurrence but is shown about 0.5 miles farther to the west and is considered to be a less accurate location. Still (1991 [BOM, v. 2, sec A) refers to this as the 'Massive Chalcopyrite Deposit.'

The deposit is extremely inaccessible. It can only be reached from a helicopter landing site on the ridge by a 200 foot rappel down a vertical to overhanging cliff that continues down for another 3,000 feet.

Commodities:

Main: Ag, Au, Cu, W

Other: Zn

Ore minerals: Chalcopyrite, goethite, pyrite, pyrrhotite, sphalerite

Gangue minerals: Augite

Geologic description:

The following description is summarized from Brew and others (1978).

A massive-sulfide zone is located between a 5-foot-wide epidote-bearing diorite zone grading into white diorite to the south and a 10-foot-wide section of calc-silicate rock grading into marble to the north. The calc-silicate rock is predominately garnet, epidote, and diopside with thin sulfide and scheelite veins. The massive-sulfide zone consists of chalcopyrite, augite, goethite, pyrrhotite, scheelite, and sphalerite; the augite and scheelite is replaced by chalcopyrite and pyrrhotite. The mineralization probably formed as a result of metasomatic replacement of marble in a high temperature contact zone. The sulfide zone is 12 feet wide by 80 feet long. The average grade of two samples across the zone is 0.52% tungsten, 5% copper, 7 ounces of silver per ton, and 0.15 ounce of gold per ton. Four of seven grab samples from the 10-foot-wide calc-silicate zone contained from 159

to 11,000 ppm tungsten. Similar mineralization is present elsewhere in the vicinity of this occurrence, but access is limited because of the steep terrain. The mineralization is probably Cretaceous or younger in age, based on the age of the diorite that hosts this occurrence.

Alteration:
Skarn, tactite.

Age of mineralization:
Probably Cretaceous based on the age of the diorite that hosts this occurrence (Brew and others, 1978).

Deposit model:
Skarn, contact metasomatic (Cox and Singer, 1986; model 18a or 19a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
18a or 19a

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The deposit is within Glacier Bay National Park and Preserve where exploration and development is restricted.

References:
MacKevett and others, 1967; MacKevett and others, 1971; Cobb, 1972 (MF 424); Brew and others, 1978; Cobb, 1981 (OF 81-82A); Cobb, 1981 (OF 81-82B); Berg, 1984; Still, 1991 (BOM, v. 2, sec. B).

Primary reference: Brew and others, 1978

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (near Mt. Barnard)

Site type: Occurrence

ARDF no.: SK018

Latitude: 59.09 **Quadrangle:** SK A-6

Longitude: 136.90

Location description and accuracy:

This occurrence is at an elevation of 5,475 feet in Glacier Bay National Park and Preserve; it is at the top of a nunatak, 2.6 miles southeast of the summit of Mount Barnard. It is shown as location 38 on Plate III of Brew and others (1978) and location SE27 by Nokleberg and others (1987).

Commodities:

Main: Cu

Other: Ag, Au, Co

Ore minerals: Chalcopyrite, pyrite, pyrrhotite

Gangue minerals: Epidote

Geologic description:

The following description is summarized from Brew and others (1978).
Small pods up to 0.5 foot thick of pyrrhotite and pyrite with a trace of chalcopyrite are associated with andesite, greenstone, epidote, and thin bands of limestone or marble. Abundant chloritic and some sericitic alteration are in a contact metamorphic zone near a Cretaceous granitic intrusive. A grab sample of one pod contained 1,000 ppm copper, 0.1 ppm gold, 0.5 ppm silver, and 100 ppm cobalt. The mineralization is probably Cretaceous, based on the age of the granitic intrusive which is associated with it.

Alteration:

Chloritization, epidotization, sericitization.

Age of mineralization:

Probably Cretaceous or younger based on its association with nearby granitic intrusive rocks (Brew and others, 1978).

Deposit model:

Probable replacement deposit adjacent to intrusive (Cox and Singer, 1986; model 19a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
19a

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
There are probably similar deposits in the vicinity, but the rugged terrain and glaciers hamper investigation (Brew and others, 1978). The deposit is within Glacier Bay National Park and Preserve where exploration and development is restricted.

References:
Brew and others, 1978; Cobb, 1981 (OF 81-82A); Cobb, 1981 (OF 81-82B); Berg, 1984; Nokleberg and others, 1987.

Primary reference: Brew and others, 1978

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (on the west side of Tarr Inlet)

Site type: Occurrence

ARDF no.: SK019

Latitude: 59.01 **Quadrangle:** SK A-6

Longitude: 137.01

Location description and accuracy:

This occurrence is in the Glacier Bay National Park and Preserve on the west side of Tarr Inlet about 4.5 miles southeast of the Canadian border. It is on a knob, informally known as 'Tarr Inlet Knob', that reaches a height of about 600 feet. It is shown as number 6 on figure C-2 and in figure C-39 of Brew and others (1978) and as location 17 on Plate 1 of MacKevett and others (1971). A less accurate location of this occurrence, which places it about 3/4 mile farther to the northwest, is shown as number 2 by Cobb (1972 [MF-424]).

Commodities:

Main: Ag, Cu, Pb, Zn

Other: Au

Ore minerals: Arsenopyrite, chalcopyrite, pyrite, sphalerite

Gangue minerals: Quartz

Geologic description:

The following description is summarized from Brew and others, 1978. Mineralization is found along altered fault and shear zones in quartz monzodiorite that makes up the Tarr Inlet Knob. The quartz monzodiorite contains large xenoliths of shale and volcanics. Porphyritic granite, probably in the form of small plugs, occurs at two sites on the knob. The altered and mineralized fault and shear zones are up to 200 feet thick and are often brightly iron-stained. Most of the mineralization occurs along altered fault zones that are oriented N20-30W and N10-30E. The deposit consists of pyrite, chalcopyrite, sphalerite, arsenopyrite, and quartz. The prospect is generally similar to the Margerie (SK020) prospect located about 2.5 miles to the west and both may have been mineralized by the same process. Most of the more significant mineralization has been found on the east side of the Tarr Inlet Knob below the 500-foot elevation. Samples of the richer portions of the mineralized zone that vary from 3 feet to 16 feet wide contain up to 3,300 ppm copper, 5,000 ppm zinc, 3,100 ppm lead, 50 ppm silver, and 0.15 ppm gold. A 1/2-foot sample contained 0.48% copper, 4.3% zinc, 100 ppm silver, 1,500 ppm lead, and 0.15 ppm gold.

The Tarr Inlet Knob is in the Geikie province of Brew and others (1978) near its west-

ern margin. It is along the Brady Glacier fault zone, the eastern edge of the Tarr Inlet suture zone, which forms the western boundary of the Geike province. Movement along these structures is probably responsible for the fault and shear zones which localize the mineralization at this site. The faulting and mineralization must be younger than the Cretaceous intrusive rocks at Tarr Inlet Knob.

Alteration:

Alteration is mentioned but not described in Brew and others (1978).

Age of mineralization:

The mineralization must be younger than the Cretaceous age of the host intrusive rocks (Brew and others, 1978).

Deposit model:

Mineralized veins and shear zones in a quartz monzodiorite, possibly a porphyry copper occurrence (Cox and Singer, 1986: model 17?).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

17?

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Brew and others (1978) judged the mineralized zones to be too small and too low-grade to be economic.

Additional comments:

The deposit is within Glacier Bay National Park and Preserve where exploration and development is restricted.

References:

Wright and Wright, 1937; MacKevett and others, 1967; MacKevett and others, 1971; Cobb, 1972 (MF 424); Brew and others, 1978; Cobb, 1981 (OF 81-82A); Berg, 1984; Still, 1991 (BOM, v. 2, sec. B).

Primary reference: Brew and others, 1978

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Margerie; Margarie Glacier

Site type: Prospect

ARDF no.: SK020

Latitude: 59.01 **Quadrangle:** SK A-6

Longitude: 137.09

Location description and accuracy:

This prospect is in Glacier Bay National Monument on the south side of the Margerie Glacier between elevations of 1,100 feet and 3,200 feet. It is about 2 miles from tidewater on the west side of Tarr Inlet in the NW1/4, section 16, T. 33 S., R. 50 E. of the Copper River Meridian. It is shown as location 7 in figure C-2 and in figure C-39 of Brew and others (1978); as location 1 by Cobb (1972; MF-424); and as location SE24 by Nokleberg and others (1987).

Commodities:

Main: Ag, Au, Cu, W

Other: Mo, Zn

Ore minerals: Arsenopyrite, chalcopyrite, gold, molybdenite, powellite-scheelite, pyrite, pyrrhotite, sphalerite

Gangue minerals: Quartz

Geologic description:

The following description is summarized from Brew and others (1978). The Margerie prospect is a porphyry copper deposit. Disseminated chalcopyrite, pyrite, pyrrhotite, and powellite-scheelite occur in a massive porphyritic, Tertiary quartz monzodiorite stock and associated dikes. The stock contains a porphyritic quartz monzonite core. A prominent joint set that trends N50E and dips steeply to the northwest cuts across the stock and extends into the surrounding Permian section of hornfelsed marine volcanic and sedimentary rocks. Porphyritic monzodiorite dikes up to 50 feet thick and quartz-sulfide veins up to 1.7 feet thick occupy the joint set. The dikes extend into the country rock but the veins do not. The veins, which are less important than disseminated mineralization, contain quartz, chalcopyrite, arsenopyrite, sphalerite, pyrite, pyrrhotite, powellite-scheelite, and molybdenite. Disseminated sulfide mineralization, primarily chalcopyrite, pyrite, pyrrhotite, and some powellite-scheelite, is largely confined to the stock and dikes. Where dikes extend into the surrounding marine sedimentary rocks, they contain much less disseminated sulfides. The joint system may have acted as the conduit for sulfide mineralization that replaced mafic minerals in the intrusive rocks. Plagioclase has been subjected

to slight to moderate sericitization and K-spar alteration and biotite has been moderately chloritized. Limited investigation of the marine sedimentary rock section northeast of the stock did not reveal significant mineralization. However, the Permian marine volcanic and sedimentary rocks to the southwest of the stock contained various iron-stained zones, fault and fracture fillings of quartz and sulfides, and lenses of massive pyrite, pyrrhotite, and chalcopyrite. The Margerie prospect is within the Tarr Inlet suture zone, which forms the western boundary of the Geike province of Brew and others (1978). Based on the age of the host stock and dikes, the mineralization is Tertiary.

Alteration:

Plagioclase has been subjected to moderate sericitization and K-spar alteration, and biotite has been moderately chloritized (Brew and others, 1978).

Age of mineralization:

Tertiary (Brew and others, 1978).

Deposit model:

Copper porphyry with associated veins, pods, and disseminations (Cox and Singer, 1986; model 17).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

17

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Brew and others (1978) cite the following sequence of activity at the Margerie prospect. The prospect was discovered by Leo Mark Anthony in 1960 and 6 claims were staked that year. Investigations were made by E. M. MacKevett of the USGS in 1966, George Moerlein in 1968 and the U.S. Bureau of Mines in 1975 and 1976. A Masters thesis by M. A. Parke was in preparation in 1978.

Production notes:

Reserves:

As part of the mineral resources study of the Glacier Bay National Monument by Brew and others (1978), the U.S. Bureau of Mines estimated the deposit to contain 160 million tons of inferred resource that contain 0.2% copper, 0.008 ounces of gold per ton, 0.13 ounces of silver per ton, and 0.01% tungsten.

Additional comments:

The deposit is within Glacier Bay National Park and Preserve where exploration and development is restricted.

References:

MacKevett and others, 1967; Moerlein, 1968; MacKevett and others, 1971; Cobb, 1972 (MF 424); Anthony, 1977; Brew and others, 1978; Cobb, 1981 (OF 81-82A); Berg, 1984; Nokleberg and others, 1987; Still, 1991 (BOM, v. 2, sec. B).

Primary reference: Brew and others, 1978

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Skagway

Site type: Prospect

ARDF no.: SK021

Latitude: 59.48 **Quadrangle:** SK B-1

Longitude: 135.28

Location description and accuracy:

Freeman (1963) describes this prospect as located, '..on a steep hillside about 250 feet above the tracks of the White Pass and Yukon Railroad opposite the oil tanks of the Standard Oil Company of California.' Based on Freeman's description, the prospect appears to be located about 2 miles northeast of the Skagway ferry terminal, just east of the White Pass and Yukon Railroad tracks. Its location is probably accurate to within about 1/4 mile. It is shown as location 20 by Cobb (1972 [MF 424]).

Commodities:

Main: U

Other:

Ore minerals:

Gangue minerals:

Geologic description:

The following description if from Freeman (1963). A small altered body of rhyolite(?) is surrounded by medium-grained quartz diorite. The quartz diorite is cut by several large faults and is intruded by fine-grained andesitic dikes. Uranium occurs adjacent to a prominent, steeply dipping fracture in the rhyolite(?), where it is associated with iron oxide staining and globules of clay that resemble vesicle fillings. The highest grade sample of olive-green clay that was probably hand picked from vesicles in the rhyolite(?), contained 0.72% equivalent uranium and 1.2% uranium. The amount of this material is very small and most of the mineralization consists of highly altered rhyolite(?) stained with red and yellowish brown iron oxides that contained up to 0.22% equivalent uranium. No sulfides or gangue minerals were seen except for specks of purple fluorite. The age of the mineralization is not well established, but it is probably Tertiary based on the Paleocene and Eocene ages (Brew and Ford, 1994) of the intrusive rocks in the area.

Alteration:

Clay alteration of rhyolite (?), iron staining.

Age of mineralization:

Probably Tertiary based on the Paleocene and Eocene ages (Brew and Ford, 1994) of intrusive rocks in the area.

Deposit model:

Very little information. From the description of Freeman (1963), it is possibly a vein or fissure related uranium occurrence in highly altered rhyolite(?) (Cox and Singer, 1986; model 25f?).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

25f?

Production Status: None

Site Status: Inactive

Workings/exploration:

One prospect pit yielded a few hundred pounds of specimens, but when inspected by USGS in 1956 no ore was in sight (Berg and Cobb, 1967).

Production notes:

Reserves:

Additional comments:

References:

Freeman, 1963; Berg and Cobb, 1967; Cobb, 1972 (MF 424); Cobb, 1978 (OF 78-316); Berg, 1984; Brew and Ford, 1994.

Primary reference: Freeman, 1963

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (at headwaters of Burro Creek)

Site type: Occurrence

ARDF no.: SK022

Latitude: 59.48 **Quadrangle:** SK B-2

Longitude: 135.47

Location description and accuracy:

This occurrence is at an elevation of 3,500 feet about 1.4 miles west of Parsons Peak in a saddle at the head of Burro Creek. It is in the south-central part of section 36, T. 27 S., R. 58 E. of the Copper River Meridian. It is shown as mineral occurrence 8 by Redman and others (1984) and as number S066 by Wells and others (1986).

Commodities:

Main: Ag, Cu

Other:

Ore minerals: Chalcopyrite, pyrite

Gangue minerals: Quartz

Geologic description:

According to Redman and others (1984), this occurrence consists of quartz vein float from the Burro Creek fault zone where it cuts biotite quartz monzonite of the Ferebee pluton at the head of Burro Creek. The quartz-vein float contains pyrite and chalcopyrite A sample contained 1,580 ppm copper, 50.5 ppm silver, 170 ppm lead, and 128 ppm molybdenum. The veins were found only as float along the fault trace. The mineralization must be younger than the Late Cretaceous to early Paleocene Ferebee pluton (Redman and others, 1984).

Alteration:

Age of mineralization:

Younger than Late Cretaceous based on the age of intrusive rocks cut by the Burro Creek fault (Redman and others, 1984).

Deposit model:

Quartz-sulfide vein (Cox and Singer, 1986; model 22c?).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

22c?

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:
Redman and others, 1984; Wells and others, 1986.

Primary reference: Redman and others, 1984

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (on Mount Harding)

Site type: Occurrence

ARDF no.: SK023

Latitude: 59.42 **Quadrangle:** SK B-2

Longitude: 135.43

Location description and accuracy:

This occurrence is near the summit of Mount Harding on its northeast side. It is in the northeast corner of section 30, T. 28 S., R. 59 E. of the Copper River Meridian. It is shown as mineral occurrence 9 on sheet 1 of Redman and others (1984) and as map number S076 by Wells and others (1986).

Commodities:

Main: Ag, Cu

Other:

Ore minerals: Chalcopyrite, pyrrhotite

Gangue minerals: Quartz

Geologic description:

The following description is from Redman and others (1989). Small, up to 2.5-inch-long, massive pods of pyrrhotite with traces of chalcopyrite in quartz are associated with a fault zone which cuts high grade paragneiss and the Late Cretaceous to early Paleocene, Ferebee pluton. A sample of the pyrrhotite contained 555 ppm copper and 3.1 ppm silver. The Late Cretaceous to early Paleocene age of the Ferebee pluton establishes a maximum age for the mineralization.

Alteration:

Age of mineralization:

Late Cretaceous or younger, based on the age of the Ferebee pluton (Redman and others, 1984).

Deposit model:

Pods of cupriferous, massive sulfides in a fault zone (Redman and others, 1984).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:

Redman and others, 1984; Wells and others, 1986.

Primary reference: Redman and others, 1984

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Mount Ripinski

Site type: Prospect

ARDF no.: SK024

Latitude: 59.256 **Quadrangle:** SK B-2

Longitude: 135.514

Location description and accuracy:

This prospect is on the south side of Mt. Ripinski approximately 0.5 mile south of triangulation station '3563'. It is at an elevation of approximately 1,500 feet near the base of a steep south-facing cliff. Redman and others (1984) show this site as occurrence 1, but they were unable to locate the 100-foot adit reported to occur at this site by Robertson (1956). The location is accurate to within about 0.25 mile.

Commodities:

Main: Au, Cu, Fe

Other: Pd, Pt

Ore minerals: Bornite, chalcopyrite, malachite, pyrite, pyrrhotite

Gangue minerals: Calcite, quartz

Geologic description:

The following description is from Still and others (1991). Chalcopyrite-bornite-bearing quartz-calcite veins and chalcopyrite-bearing metabasalt occur in cliffs and in rubble beneath the cliffs on the south side of Mount Ripinski. Almost all of the quartz veins that were sampled contained low gold values, but some veins contained up to 12.0 ppm gold and 3.97% copper. The metabasalt contained up to 0.60 ppm gold and 3.50 % copper. Eighteen of the 27 samples were analyzed for platinum and palladium. They contained from 0.01 to 0.06 ppm palladium and one sample contained 0.01 ppm platinum. This site is immediately north of the Johnson Creek fault which separates metabasalt to the north from Cretaceous ultramafic rocks, including pyroxenite, to the south. Iron deposits associated with pyroxenite are also reported from this general area but no descriptions are given (Redman and others, 1984).

The Cretaceous age of the metabasalts (Still and others, 1991; MacKevett and others, 1974) establishes a maximum age for the mineralization. However, based on fossil evidence from the Chilkat Peninsula to the southeast, Plafker, Hudson and Silberling (1979) and Plafker and Hudson (1980) infer a Late Triassic age for the metabasalts.

Alteration:

Age of mineralization:
Cretaceous or younger, or Late Triassic or younger (Plafker, Hudson and Silberling, 1979; Plafker and Hudson, 1980).

Deposit model:
Possible metamorphic quartz-sulfide veins in association with copper rich metabasalts and an iron-rich ultramafic intrusion (Cox and Singer, 1986; model 36a?).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
36a?

Production Status: None

Site Status: Inactive

Workings/exploration:
Redman and others (1984) refer to a report by Robertson (1956) of a 100-foot adit but were unable to find it.

Production notes:

Reserves:
Robertson (1956) indicates that several billion tons of material with 2 to 10% iron may exist in this area.

Additional comments:

References:
Robertson, 1956; Plafker, Hudson and Silberling, 1979; Plafker and Hudson, 1980; Berg, 1984; Redman and others, 1984; Gilbert and others, 1991; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still and others, 1991 (BOM, v. 2, sec. A)

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (near Tukgahgo Mountain)

Site type: Occurrences

ARDF no.: SK025

Latitude: 59.30 **Quadrangle:** SK B-2

Longitude: 135.63

Location description and accuracy:

The location of this occurrence is in the approximate center of an area that includes Tukgahgo Mountain, the ridge extending to the east from Tukgahgo Mountain, and VABM 4520 ('Chilly'), to the southwest of Tukgahgo Mountain. It is within the area of anomalously high samples 804 to 817 shown on sheet 2 of Gilbert and others (1991). The occurrences were informally named 'Chilly' by Still and others (1991).

Commodities:

Main: Ag, Au, Cu

Other: Pd, Pt

Ore minerals: Chalcopyrite, malachite, molybdenite, pyrite

Gangue minerals: Quartz

Geologic description:

The following description is from Still and others (1991). The geology of the area consists of roof pendants of metabasalt and amphibolite surrounded by hornblende diorite, granodiorite and monzonite. Sporadic narrow and discontinuous quartz veins occur in the area, mostly near the northwesterly trending, Tukgahgo Mountain fault. A sample collected across a vein with visible molybdenite contained 1,240 ppm molybdenum. Seven samples analyzed for platinum and palladium contained from nil to 0.09 ppm platinum and from 0.004 to 0.07 ppm palladium. The source of the platinum and palladium may be ultramafic rocks that crop out several miles to the southeast of this area. Descriptions of samples collected from this area by Gilbert and others (1991) include numerous references to quartz veins with pyrite; chalcopyrite, malachite, and molybdenite are also mentioned in some descriptions. Samples contained up to 0.824 ppm gold, 2.70 ppm silver, and 2,140 ppm copper.

The intrusive rocks are part of the Mount Kashagnak pluton (Redman and others 1984). It's mid-Cretaceous age establishes a maximum age for the mineralization.

Alteration:

Age of mineralization:
Mid-Cretaceous or younger based on the age of the Mount Kashagnak pluton that hosts the deposits (Redman and others, 1984).

Deposit model:
Polymetallic veins (?) (Cox and Singer, 1986; model 22c?).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
22c?

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The Alaska, Chilkat Bald Eagle Preserve is less than 1 mile to the west of these occurrences.

References:
Redman and others, 1984; Gilbert and others, 1991; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Gilbert and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (west of Tukgahgo Mountain)

Site type: Occurrence

ARDF no.: SK026

Latitude: 59.30 **Quadrangle:** SK B-2

Longitude: 135.68

Location description and accuracy:

This occurrence is at an elevation of about 1,500 feet, 1.7 miles west of the summit of Tukgahgo Mountain. It is in the south-central part of section 5, T. 30 S., R. 57 E. of the Copper River Meridian. It is shown as mineral occurrence 7 on sheet 1 of Redman and others (1984) and as number S048 by Wells and others (1986).

Commodities:

Main: Ag, Cu

Other:

Ore minerals: Chalcopyrite

Gangue minerals: Quartz

Geologic description:

Redman and others (1984) describe this occurrence as a series of chalcopyrite-bearing quartz veins that cut a diorite dike in metabasalt. The veins are 1 to 10 inches thick and at least 35 feet long. A representative sample contained 520 ppm copper and 0.3 ppm silver. The diorite dike is probably the same age as the nearby mid-Cretaceous, Mount Kashagnak pluton.

Alteration:

Age of mineralization:

Mid-Cretaceous or younger based on the age of the dike cut by the veins (Redman and others, 1984).

Deposit model:

Quartz sulfide veins (Cox and Singer, 1986; model 22c or 36a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

22c or 36a

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:
Redman and others, 1984; Wells and others, 1986.

Primary reference: Redman and others, 1984

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (in the Takshanuk Mountains)

Site type: Occurrence

ARDF no.: SK027

Latitude: 59.32 **Quadrangle:** SK B-2

Longitude: 135.67

Location description and accuracy:

This occurrence is near the top of Peak 4920 in the Takshanuk Mountains; it is approximately 1.9 miles northwest of Tukgahgo Mountain in the NW1/4, section 33, T. 29 S., R. 58 E. of the Copper River Meridian. It is shown as number 28 by Berg and others (1981); mineral occurrence number 5 on sheet 1 of Redman and others (1984); and number S045 by Wells and others (1986).

Commodities:

Main: Ag, Au, Cu

Other:

Ore minerals: Bornite, chalcopyrite, gold, hematite, malachite

Gangue minerals: Quartz

Geologic description:

Redman and others (1984) describe this occurrence as, 'Malachite-stained quartz veins that cut diorite and carry chalcopyrite and bornite.' The veins trend N25E and dip 55E. They can be traced for at least 330 feet and occupy a zone 80 feet wide. A sample of mineralized vein contained 5.73% copper and 21 ppm silver. The mineralization is near a metabasalt body that is probably a pendant within the mid-Cretaceous, Mount Kashagnak pluton. This is probably the same occurrence referred to by Buddington and Chapin (1929) who report bornite and hematite from quartz veins about 10 miles northwest of Haines.

Alteration:

Age of mineralization:

Mid-Cretaceous or younger based on age of the Mount Kashagnak pluton (Redman and others, 1984).

Deposit model:

Quartz sulfide veins (Cox and Singer, 1986; model 36a or 22c),

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
36a or 22c

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:
Buddington and Chapin, 1929; Cobb, 1972 (MF 424); Cobb, 1978 (OF 78-316); Berg and others, 1981; Berg, 1984; Redman and others, 1984; Wells and others, 1986; Still, 1991 (BOM, v. 2, sec. A).

Primary reference: Redman and others, 1984

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (north of Mount Kashagnak)

Site type: Occurrence

ARDF no.: SK028

Latitude: 59.39 **Quadrangle:** SK B-2

Longitude: 135.70

Location description and accuracy:

This occurrence is at an elevation of about 2,750 feet about 0.7 miles north of the summit of Mount Kashagnak. It is at the east-central edge of section 6, T. 29 S., R. 58 E. of the Copper River Meridian. It is shown as mineral occurrence 13 by Redman and others (1984) and as number S043 by Wells and others (1986).

Commodities:

Main: Ag, Au, Mo

Other:

Ore minerals: Molybdenite(?)

Gangue minerals: Quartz

Geologic description:

According to Redman and others (1984), a few rare, thin quartz veins 0.04 to 0.16 inches wide can be traced for at least 10 feet. The veins contain small amounts of molybdenum, gold, and silver. One sample of a single vein with attached wallrock contained 137 ppm molybdenum, 2.3 ppm silver, and 0.7 ppm gold. The veins occur within the biotite-quartz-monzonite-porphyry core of the mid-Cretaceous Mount Kashagnak pluton.

Alteration:

Age of mineralization:

Mid-Cretaceous or younger based on the age of the Mount Kashagnak pluton (Redman and others, 1984).

Deposit model:

Quartz vein with Mo, Au and Ag (Cox and Singer, 1986; model 22c?),

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

22c?

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:
Redman and others, 1984; Wells and others, 1986.

Primary reference: Redman and others, 1984

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (at head of Goat Hollow)

Site type: Occurrence

ARDF no.: SK029

Latitude: 59.45 **Quadrangle:** SK B-3

Longitude: 135.86

Location description and accuracy:

This occurrence is at an elevation of approximately 5,400 feet on the ridge at the head of the Goat Hollow drainage. It is about 3.7 miles, N20E from the village of Klukwan in the NE1/4, section 15, T. 28 S., R. 56 E. of the Copper River Meridian. It is in the approximate center of a line of samples, numbers 766 to 771, shown on sheet 2 of Gilbert and others (1991) and is included within the area of number 29 on sheet 1 of Still and others (1991).

Commodities:

Main: Ag, Au, Cu

Other:

Ore minerals: Bornite, chalcopyrite, malachite

Gangue minerals:

Geologic description:

Still and others (1991) informally refer to this as the 'Goat Hollow' occurrence. They collected a sample from a chalcopyrite-bornite lens about 0.5 feet in width that contained 15.052 ppm gold, 54.2 ppm silver and, 21.8% copper. Other bedrock and float samples collected at this locality contained up to 0.72 ppm gold, 4.1 ppm silver, and 1.2% copper (samples F103 to F105 of sheet 1 and samples 766 to 771 of sheet 2 of Gilbert and others, 1991). Sample descriptions by Gilbert and others (1991) include foliated diorite and pyroxenite, diorite, monzodiorite, and ultramafic rock with feldspar veinlets. In the area of the anomalous samples, Gilbert and others (1987) have mapped a steep fault that strikes northwesterly and separates Cretaceous diorite and quartz diorite to the southwest from Cretaceous monzodiorite and quartz monzodiorite to the northeast. They consider the monzodiorite and quartz monzodiorite to be part of the compositionally zoned, Kashagnak pluton of Redman and others (1984), but believe the diorite and quartz diorite are older. It is unclear if the mineralization is related to the faulting or to a particular intrusive rock unit. If the deposit is related to the intrusives, the mineralization is Cretaceous or younger in age.

Alteration:

Age of mineralization:

If the deposit is related to intrusive rocks, the mineralization is Cretaceous or younger in age.

Deposit model:

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:

MacKevett and others, 1974; Redman and others, 1984; Gilbert and others, 1987; Gilbert and others, 1991; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Klukwan

Site type: Prospect

ARDF no.: SK030

Latitude: 59.42 **Quadrangle:** SK B-3

Longitude: 135.88

Location description and accuracy:

The prospect is approximately 1.5 miles north, northeast of the village of Klukwan at an elevation of 1,200 feet in a canyon on the southwest side of Iron Mountain. It is the approximate center of a 4-mile-long deposit that extends to the northwest and southeast and is about 1 mile wide. It is shown as location 16 of Cobb (1972 [MF 424]) and location SE22 of Nokleberg and others (1987).

Commodities:

Main: Fe,Ti

Other: Au, Cu, Pd, Pt, V

Ore minerals: Bornite, chalcopyrite, gold, hematite, ilmenite, palladium, platinum, titaniferous magnetite

Gangue minerals:

Geologic description:

The Klukwan mafic/ultramafic complex lies within the Taku Terrane of Berg (1978) and forms the north end of the Klukwan-Duke belt (Brew and Morrell, 1978) of concentrically zoned, mafic/ultramafic complexes of probable middle Cretaceous age. The Klukwan ultramafic, a pyroxenite which hosts the deposit (MacKevett and others, 1974), is surrounded by hornblende diorite which is in contact with Cretaceous metabasalt to the west and Tertiary quartz diorite to the east. The pyroxenite is approximately 4 miles long in a northwest-southeast direction and up to 1.5 miles wide (Still, 1984 [OF 21-84]).

The pyroxenite is composed principally of augite and hornblende with lesser amounts of feldspar, epidote, chlorite, magnetite, ilmenite, and at some locations, sulfides. Accessory to trace silicates include hematite, spinel, and leucoxene (MacKevett and others, 1974). The sulfides are mostly chalcopyrite, but pyrrhotite, pyrite, and bornite occasionally occur (Still, 1984 [OF 21-84]). The magnetite, which is titaniferous, and ilmenite occur as disseminations and as lenses of almost pure magnetite-ilmenite. Magnetite is typically interstitial to pyroxene and idiomorphic against hornblende, indicating that it formed after pyroxene but before hornblende (MacKevett and others, 1974). According to Taylor and Noble (1969), textural evidence indicates that the titaniferous magnetite recrystallized

prior to crystallization of the hornblende. Robertson (1956) estimates the pyroxenite to contain from 5% to 51% magnetite and ilmenite. He also noted that the greatest concentration of titaniferous magnetite occurs in the lower portions of the pyroxenite. Taylor and Noble (1969), however, report a relatively uniform titaniferous magnetite content of 15 to 20% for the pyroxenite.

Still (1984 [OF 21-84]) noted: 1) elevated gold, platinum, and palladium values in the Klukwan mafic/ultramafic complex are generally associated with sulfides, predominantly chalcopyrite, and are generally not associated with magnetite; 2) intermittent low grade mineralization averaging an estimated 750 to 1,500 ppm copper occurs along the basal contact of the pyroxenite near its southern end; and 3) hydrothermal pinch and swell veins, thought to be residual material from the ultramafic, that contain irregular sulfide mineralization occupy northerly striking, steeply dipping, shear zones near the southeastern margin of the pyroxenite. Assays of these veins contained up to 0.14 ounces of gold per ton, 0.003 ounces of platinum per ton, 0.008 ounces of palladium per ton, and 6.5% copper.

Clark and Greenwood (1972), based on analyses of 10 samples from the Klukwan mafic/ultramafic complex indicate that it has an average platinum and palladium contents of 0.046 and 0.040 ppm respectively, with maximum values for both platinum and palladium of 0.100 ppm.

According to Still (1984 [OF 21-84]), samples assay a maximum of 46.2% iron, 6.5% copper, 4.95% titanium, 0.0156 ounces of gold per ton, 0.031 ounces of platinum per ton, 0.011 ounces of palladium per ton, and 2,730 ppm vanadium.

In their metallurgical study, Wells and Thorne (1953) commented that most of the titanium occurs as sphene. Other workers do not mention the presence of sphene (MacKevett and others, 1974; Robertson, 1956; Still, 1984 [OF 21-84]) and refer to magnetite and ilmenite as the main titanium-bearing minerals.

Alteration:

Epidote alteration of hornblende diorite near contact with pyroxenite.

Age of mineralization:

Coeval with the Cretaceous pyroxenite (Still, 1984 [OF 21-84]).

Deposit model:

Disseminated magmatic PGE-Fe-Ti minerals in a zoned ultramafic body (Cox and Singer, 1986; model 9),

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

9

Production Status: No

Site Status: Active

Workings/exploration:

According to Still (1984 [OFR 21-84]), claims covering both the alluvial (SK031) and

lode occurrences were staked in 1946. The Alaska Iron Mines company was created to develop the deposit. Work through 1961 included sampling and diamond drilling of the lode, pit sampling and churn drilling of the placer, aeromagnetic and ground magnetic surveys, and surface mapping. A pilot mill was constructed and copper concentrates were produced for metallurgical testing. The claims were leased to Columbia Iron Mining Company in 1961 and some claims were patented in 1964. The property reverted back to Alaska Iron Mines in 1972.

Wells and Thorne (1953) reported that the most effective metallurgical treatment resulted from wet magnetic separation of ore ground to minus-20 mesh, followed by grinding and retreatment of the rougher concentrate. This produced concentrates with 62% to 64% iron and total iron recoveries of 45% to 97%, depending on the head grades of the samples. These recoveries corresponded to a recovery of about 98% of the magnetic iron. The titanium-oxide content of the concentrates from low-grade ores averaged about 2.2%. Concentrates from higher-grade samples contained up to 4.2% titanium dioxide.

Production notes:

Reserves:

Robertson (1956) estimates the deposit to contain between 1 and 5 billion tons of pyroxenite with an average grade of about 13% iron. This estimated resource includes a zone in the lower part of the pyroxenite that he estimates to contain 500 million tons that contain 20% +5% iron. Berg and Cobb (1967) cite several billion tons of rock containing about 13% magnetic iron. Still (1984 [OFR 21-84]) cites a 1972 unpublished report by the Henry J. Kaiser Company that estimates a reserve of 3.5 billion tons with a soluble iron content of 16.8%.

Page and others (1973) refer to a published reserve of 500 million tons of titaniferous magnetite with an average platinum group metals content of 0.0027 ounces per ton. However, Still's observation (1984 [OFR 21-84]) that gold, platinum, and palladium are associated with sulfides and not with magnetite does not support that reserve figure.

Additional comments:

This prospect is within about 1 mile of the Alaska, Chilkat Bald Eagle Preserve.

References:

Wells and Thorne, 1953; Robertson, 1956; Berg and Cobb, 1967; Winkler and MacKevett, 1970; Clark and Greenwood, 1972; Cobb, 1972 (MF 424); Page and others, 1973; MacKevett and others, 1974; Cobb, 1978 (OF 78-316); Berg, 1984; Still, 1984 (OF 21-84); Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still, 1984 (OF 21-84)

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Klukwan Fan

Site type: Prospect

ARDF no.: SK031

Latitude: 59.41 **Quadrangle:** SK B-3

Longitude: 135.90

Location description and accuracy:

This prospect is an alluvial fan on the southwest side of Iron Mountain; it is about 1 mile north of the village of Klukwan. The alluvial fan extends for a radius of approximately 1 mile around the location. It is shown as location 15 by Cobb (1972; MF-424).

Commodities:

Main: Au, Cu, Fe, Pd, Pt, Ti, V

Other:

Ore minerals: Chalcopyrite, gold, ilmenite, hematite, titaniferous magnetite, palladium, platinum

Gangue minerals:

Geologic description:

The following description is summarized from MacKevett and others (1974). The Klukwan fan is a Holocene alluvial deposit consisting of pyroxenite, gabbro, and diorite detritus that ranges from silt to large boulders in size. Parts of the fan are almost entirely pyroxenite while others are as much as 50% diorite and gabbro. The iron and the titanium are primarily in titaniferous magnetite that is widely distributed in the pyroxenite, both as disseminations and as nearly pure fragments. This alluvial material has been eroded from the mid-Cretaceous zoned mafic/ultramafic complex at Iron Mountain (SK030), which includes a core of pyroxenite surrounded by hornblende diorite. The northwest-trending Chilkat Fault, which separates the Taku terrane on the east from the Alexander terrane on the west, lies under the alluvial fan.

Wells and Thorne (1953) comment that much of the titanium occurs in sphene, but later workers (MacKevett and others, 1974; Still, 1984 [OF 21-84]) refer only to titaniferous magnetite and ilmenite as the titanium-bearing minerals.

Alteration:

Age of mineralization:

The deposit is a Holocene alluvial fan (MacKevett and others, 1974).

Deposit model:
A placer iron deposit in an alluival fan eroded from a magnetite-bearing pyroxenite body.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: No

Site Status: Active

Workings/exploration:
According to Still (1984 [OF 21-84]), claims covering both the alluvial and lode occurrences (SK030) were staked in 1946. The Alaska Iron Mines company was created to develop the deposit(s). Work through 1961 included sampling and diamond drilling of the lode, pit sampling and churn drilling of the placer, aeromagnetic and ground magnetic surveys, and surface mapping. A pilot mill was constructed and copper concentrates were produced for metallurgical testing. The claims were leased to Columbia Iron Mining Company in 1961 and some claims were patented in 1964. The property reverted back to Alaska Iron Mines in 1972.

Wells and Thorne (1953) reported that the most effective metallurgical treatment resulted from wet magnetic separation of ore ground to minus-20 mesh, followed by grinding and retreatment of the rougher concentrate. This produced concentrates with 62% to 64% iron and total iron recoveries of 45% to 97%, depending on the head grades of the samples. These recoveries corresponded to a recovery of about 98% of the magnetic iron. The titanium-oxide content of the concentrates from low-grade ores averaged about 2.2%. Concentrates from higher-grade samples contained up to 4.2% titanium dioxide.

Production notes:

Reserves:
Williams (1953) notes that the alluvial fan is a nearly perfect cone that contains about 600 million tons of material. He indicates that sampling showed the alluvial fan to average about 12% iron. Based on volume calculation for the alluvial fan and a density of 20 cubic feet per ton, Robertson (1956) estimates the fan to contain 500 million tons of broken rock that averages 10% magnetite. Still (1984 [OFR 21-084]) cites an unpublished 1972, Henry J. Kaiser Company report that estimates the fan contains 989,761,000 tons of material with 10.8% soluble iron.

Additional comments:
The Haines Highway crosses this alluvial fan and provides good accessibility. However, the alluvial fan lies partly in, and adjacent to, the Alaska, Chilkat Bald Eagle Preserve.

References:
Williams, 1952; Wells and Thorne, 1953; Williams, 1953; Robertson, 1956; Berg and Cobb, 1967; Winkler and MacKevett, 1970; Clark and Greenwood, 1972; Cobb, 1972

(MF 424); MacKevett and others, 1974; Cobb, 1978 (OF 78-316); Berg, 1984; Still, 1984 (OF 21-84); Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still, 1984 (OF 21-84)

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (southeast of Klukwan Village)

Site type: Occurrences

ARDF no.: SK032

Latitude: 59.38 **Quadrangle:** SK B-3

Longitude: 135.82

Location description and accuracy:

These occurrences are centered on a point approximately 2.8 miles, S70E from the village of Klukwan at an elevation of about 1,900 feet. This point is midway between two steep southwest flowing drainages in the SE1/4, section 4, T. 29 S., R. 57 E. of the Copper River Meridian. The location defines the approximate center of a group of anomalously high samples collected by Gilbert and others (1991). Their sample sites 778 to 780 on sheet 2 are in the more westerly drainage and sample sites F113 to F117 on sheet 1 are in the more easterly drainage. Samples F110 to F112 plot along or near the ridgetop between the two drainages.

The area has been informally called 'Nineteenmile Ridge' by Still and others (1991) who reference the sample sites of Gilbert and others (1991). However, Still and others (1991) also refer to this site as being on the west slope of Tukago (Tukgahgo?) Mountain, which is about 9 miles to the southeast in the Takshanuk Mountains. The reference to 'Tukago' Mountain is probably an error.

Commodities:

Main: Ag, Au, Cu

Other:

Ore minerals: Azurite, bornite, chalcopyrite, malachite, pyrite

Gangue minerals:

Geologic description:

The following information is summarized from Gilbert and others (1991). Several float and bedrock samples at this site were collected from two steep drainages and along or near the ridgetop between the two drainages. The samples are mostly diorite, granodiorite and hornblende diorite with both primary and secondary copper minerals. The secondary copper minerals often occur as coatings along fractures. Samples contain up to 38,400 ppm copper, 18.90 ppm silver, and 2.43 ppm gold. The samples were collected about 3.4 miles southeast of the center of the Cretaceous, Klukwan zoned-ultramafic complex (SK030). The samples come from the outer dioritic phase of the zoned complex (Gilbert and others, 1987; MacKevett and others; 1974).

Alteration:

Age of mineralization:
Cretaceous or younger based on age of the Klukwan ultramafic complex (MacKevett and others, 1974).

Deposit model:
Only an occurrence with little information; it appears to be primary copper sulfides in the outer dioritic phase of a zoned ultramafic complex, with secondary copper minerals along joints (Cox and Singer, 1986; model 9).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
9

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
These occurrences are within one mile of the Alaska, Chilkat Bald Eagle Preserve.

References:
MacKevett and others, 1974; Gilbert and others, 1987; Gilbert and others, 1991; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (along the Haines Highway)

Site type: Occurrence

ARDF no.: SK033

Latitude: 59.35 **Quadrangle:** SK B-3

Longitude: 135.76

Location description and accuracy:

This occurrence is along the Haines Highway between mileposts 15 and 16. It is about 5.8 miles southeast of the village of Klukwan. It is shown as sample sites 790 and 791 on sheet 2 of Gilbert and others (1991).

Commodities:

Main: Ag, Au, Zn

Other: Cu

Ore minerals: Chalcopyrite, malachite, pyrite, sphalerite

Gangue minerals: Quartz

Geologic description:

Gilbert and others (1991) collected several samples of quartz veins in metabasalt at this site that contained chalcopyrite, pyrite, malachite, and sphalerite. The samples contained up to 0.686 ppm gold, 2.4 ppm silver, 3,990 ppm copper, and 1.85% zinc. According to MacKevett and others (1974), the metabasalts exhibit a gradational contact with the Klukwan ultramafic complex and they considered both to be of Cretaceous age. Later workers (Plafker, Hudson and Silberling, 1979; Plafker and Hudson, 1980) assign a Late Triassic age to the metabasalts based on fossil evidence from the Chilkat Peninsula. Gilbert and others (1987) accept the Late Triassic age for the metabasalt and comment that it is juxtaposed against the plutonic rocks, including the Klukwan complex, to the east by the Tukgahgo Mountain fault, which strikes northwest and dips steeply. The veins and their settings appear similar to those at the Road Cut prospect (SK006) and unnamed occurrences (SK001, SK003) to the southeast. The Late Triassic age of the host rocks establishes a maximum age for the veins.

Alteration:

Age of mineralization:

Late Triassic or younger based on the age of host rocks (Gilbert and others, 1987).

Deposit model:
Polymetallic veins (Cox and Singer, 1986; model 22c).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
22c

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
These occurrences are on the eastern edge of the Alaska, Chilkat Bald Eagle Preserve.

References:
MacKevett and others, 1974; Plafker, Hudson and Silberling, 1979; Plafker and Hudson, 1980; Gilbert and others, 1987; Gilbert and others, 1991; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Gilbert and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Tsirku Silver

Site type: Occurrences

ARDF no.: SK034

Latitude: 59.32 **Quadrangle:** SK B-3

Longitude: 136.05

Location description and accuracy:

This occurrence is centered at an elevation of 3,800 feet about 1.1 mile east of the Tsirku River and 4.0 miles, N59W from the summit of Chunekukleik Mountain. It is in the approximate center of a northwest- trending elongate area with several occurrences of ore minerals that is about 1/2 mile long and 1/4 mile wide. This area is shown as number 25 on sheet of Still and others (1991).

Commodities:

Main: Ag, Cu, Pb, Zn

Other: Au

Ore minerals: Galena, pyrite, malachite, sphalerite

Gangue minerals: Quartz

Geologic description:

Still and others (1991) informally named this occurrence 'Tsirku Silver'. They describe it as, '...scattered, narrow, discontinuous silver-bearing zinc-galena-quartz veins hosted in dolomite and limy slate.' A representative chip sample of the highest grade vein contained 0.48 ppm gold, 653.5 ppm silver, 18.4 % zinc, and 6.2 % copper. According to Gilbert and others (1987), the veins occur within a 6-square-mile area immediately east of the Tsirku River that is cut by a swarm of felsic, intermediate, and mafic dikes. The dikes are probably Tertiary in age, based on a 29.3 + 1 to 33.0 + 1 m.y. age of nearby quartz diorite and granodiorite bodies (MacKevett and others, 1974). The probable Devonian or Mississippian age of the host rocks (Gilbert and others, 1987) establishes a maximum age for the veins. More likely, the veins are the same inferred Tertiary age as the dikes.

Alteration:

Age of mineralization:

The veins must be younger than the Devonian to Mississippian age of the host rocks (Gilbert and others, 1987) and are probably about the same age as the dikes in the area, which are inferred to be 29.3 + 1 to 33.0 + 1 m.y. based on the age of nearby quartz dio-

rite and granodiorite (MacKevett and others, 1974).

Deposit model:
Polymetallic quartz-sulfide veins (Cox and Singer, 1986; model 22c).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
22c

Production Status: None

Site Status: Probably inactive

Workings/exploration:
This occurrence was discovered in 1986 during the Bureau of Mines study reported in Still and others (1991).

Production notes:

Reserves:

Additional comments:

References:
MacKevett and others, 1974; Gilbert and others, 1987; Gilbert and Redman, 1989; Gilbert and others, 1991; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Summit Creek; Lost Silver Ledge

Site type: Mine

ARDF no.: SK035

Latitude: 59.33 **Quadrangle:** SK B-3

Longitude: 136.09

Location description and accuracy:

This mine is at an elevation of about 2,000 feet in a steep east-facing gully about 0.6 mile southwest of the mouth of Summit Creek and about 0.5 mile west of the Tsirku River. It is on the southern edge of the SE1/4, section 23, T. 29 S., R. 55 E. of the Copper River Meridian. It is shown as location 13 by Cobb (1972 [MF 424]; number S021 by Wells and others (1986); site N by Still and others (1987); site T by Gilbert and Redman (1989); and site 24 by Still and others (1991).

Based on similar locations and descriptions, it appears nearly certain that the Lost Silver Ledge deposit described by Still and others (1987), Gilbert and Redman (1989), and Still and others (1991) is the same as the Summit Creek deposit described by Eakin (1919), Cobb (1972 [MF-424]), and Wells and others (1986).

Commodities:

Main: Ag, Au, Pb, Zn

Other: Cu

Ore minerals: Galena, jamesonite, tetrahedrite

Gangue minerals: Quartz

Geologic description:

According to Eakin (1919), the prospect contains narrow silver-lead veins less than 1 foot thick. The maximum metal content was reported to be $3 gold per ton (about 0.14 ounces of gold per ton), about 60 ounces silver per ton, and about 35% lead. One sample contained nearly 3% copper. Berg and others (1981) cite a maximum gold grade of 0.145 ounces per ton and comment that the veinlets contain argentiferous galena.

As reported by Still and others (1991), this prospect consists of quartz-sulfide veins in dolomitic limestone. The veins do not continue into the adjacent slate. A vein that was mined from the surface in the 1930's is up to 0.4 feet wide and is adjacent to a felsic dike. Sulfides from the vein are primarily jamesonite with lesser amounts of galena and tetrahedrite. Samples contain up to 14.19 ppm gold, 871.6 ppm silver, 1,540 ppm zinc, 1.70% copper, and 42.5 % lead. The most prominent vein extends for several hundred feet vertically and samples of it contain 0.05 to 1.32 ppm gold, 346.0 to 3,423.1 ppm silver, 0.193

to 4.89% zinc, and 4.36 to 39.3% lead. The Devonian to Mississippian age of the host carbonate rock establishes a maximum age for the veins while the presence of an adjacent felsic dike suggests a Tertiary age based on the 29.3 + 1 to 33.0 + 1 m.y. age of nearby quartz diorite and granodiorite bodies (Gilbert and others, 1987).

Alteration:

Age of mineralization:

The Devonian to Mississippian age of the host carbonate rock establishes a maximum age for the veins while the presence of an adjacent felsic dike suggests a Tertiary age based on the 29.3 + 1 to 33.0 + 1 m.y. age of nearby quartz diorite and granodiorite bodies (Gilbert and others, 1987).

Deposit model:

Polymetallic quartz-sulfide veins (Cox and Singer, 1986; model 22c).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

22c

Production Status: Yes; small

Site Status: Active?

Workings/exploration:

Workings consist of a 5-foot adit and a stope on a high-grade silver lens mined by a local prospector, R.C. Manuel, in the 1930's. The stope is about 10 feet high, 3 to 5 feet wide, and 20 feet long. (Still and others, 1991).

Production notes:

Based on the size of the stope described by Still and others (1991), production was very small.

Reserves:

Additional comments:

References:

Eakin, 1919; Cobb, 1972 (MF 424); MacKevett and others, 1974; Cobb, 1978 (OF 78-316); Berg and others, 1981; Berg, 1984; Wells and others, 1986; Still and others, 1987; Gilbert and others, 1987; Gilbert and Redman, 1989; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (along Summit Creek)

Site type: Occurrences

ARDF no.: SK036

Latitude: 59.33 **Quadrangle:** SK B-3

Longitude: 136.12

Location description and accuracy:

This site consists of several locations along the length of Summit Creek. The center of these occurrences is somewhat arbitrarily placed near the southern edge of the SE1/4, section 22, T. 29 S., R. 55 E. of the Copper River Meridian. The site is shown as number 23 by Still and others (1991).

Commodities:

Main: Ag, Au, Ba, Zn

Other: Bi

Ore minerals: Chalcopyrite, galena, pyrite, pyrrhotite, sphalerite

Gangue minerals: Calcite, quartz

Geologic description:

According to Still and others (1991), 'Bedrock in the area consists predominately of slate and phyllite, limy slate, and minor limestone.' Stream sediment samples from the mouth of Summit Creek and from small springs near the head of Summit Creek contained up to 0.020 ppm gold, 1.2 ppm silver, 1,620 ppm zinc, 1,950 ppm barium, and 660 ppm bismuth (sheet 1, numbers 209 to 217 and F83 to F90 of Gilbert and others, 1991).

Still and others (1991) also report that bedrock and float samples were collected at scattered locations along Summit Creek . Quartz-calcite-sulfide float samples from talus slopes and moraine contained up to 0.686 ppm gold, 380.9 ppm silver, 2.5% zinc, 700 ppm copper, and 4.1% lead. A stream sediment sample from below a spring surrounded by iron-stained gossan contained 1.9% zinc, and a sample of iron-stained calcite-cemented slate collected several hundred feet below this stream-sediment sample contained 1.2 % zinc. The calcite cement precipitated from the spring water contains sphalerite.

Virtually the entire drainage of Summit Creek consists of slate (MacKevett and others, 1974). The Triassic or Devonian age of this unit, the Porcupine Slate (Redman and others, 1985; Gilbert and others, 1987), establishes a maximum age for the mineralization. Mineralization contained in cemented scree, ferricrete, and spring water precipitates is very young if not Recent but descriptions of float samples (Still and others, 1991) also

suggest that the quartz-sulfide veins are probably of Tertiary age based on the 29.3 + 1 to 33.0 + 1 m.y. age of nearby intrusive bodies (Gilbert and others, 1987).

Alteration:

Age of mineralization:

The Devonian or Triassic age of the Porcupine Slate (Redman and others, 1984; Gilbert and others, 1987) establishes a maximum age for the mineralization. The veins are of probable Tertiary based on the 29.3 + 1 to 33.0 + 1 m.y. age of nearby intrusive bodies (Gilbert and others, 1987). Mineralization in ferricrete, scree cement , and spring- water precipitates is very young to Recent (Still and others, 1991).

Deposit model:

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:

MacKevett and others, 1974; Redman and others, 1984; Gilbert and others, 1987; Gilbert and others, 1991; Still and others, 1991.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Merrill's Silver; Sunshine Mt. Silver

Site type: Prospect

ARDF no.: SK037

Latitude: 59.39 **Quadrangle:** SK B-3

Longitude: 136.07

Location description and accuracy:

This prospect is north of the Little Salmon River at an elevation of approximately 700 feet; it is approximately 1.1 miles, S32W from VABM 1720 ('Knob'). It is approximately 6 miles west of the village of Klukwan in the NE1/4, section 1, T. 29 S., R. 55 E. of the Copper River Meridian. It is shown as locations 214 to 218 by Still and others (1984); site M by Still and others (1987); site K by Gilbert and Redman (1989); and number S016 by Wells and others (1986).

Commodities:

Main: Ag, Pb, Zn

Other: Au, Cu

Ore minerals: Galena, malachite pyrite, sphalerite

Gangue minerals: Quartz

Geologic description:

Still and others (1991) describe this as a silver prospect that consists of silver-bearing, galena-sphalerite-quartz veins in dolomite and argillite. They collected rock samples that contained up to 610.3 ppm silver, 15.7% lead, 5.8% zinc, 0.471 ppm gold, and 1,640 ppm copper. Sample descriptions include: 'quartz vein with sphalerite, galena pyrite, and malachite(?)', 'quartz-gossan breccia with galena' and 'quartz-calcite breccia with galena and sphalerite'. The Devonian to Mississippian age of the carbonate host rocks (Gilbert and others, 1987) establishes a maximum age for the mineralization. However, the quartz-sulfide veins are probably of Tertiary age based on the 29.3 + 1 to 33.0 + 1 m.y. age of nearby intrusive bodies (Gilbert and others, 1987).

Alteration:

Age of mineralization:

The Devonian to Mississippian age of the carbonate rocks that host the deposit (Gilbert and others, 1987) establishes a maximum age for the mineralization. However, the quartz-sulfide veins are probably of Tertiary age, based on the 29.3 + 1 to 33.0 + 1 m.y.

age of nearby intrusive bodies (Gilbert and others, 1987).

Deposit model:
Silver-bearing quartz-sulfide veins in dolomite and argillite (Cox and Singer, 1986; 22c).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
22c

Production Status: None

Site Status: Probably inactive

Workings/exploration:
According to Still and others (1991), this prospect is in an area penetrated by overgrown logging roads, with few outcrops. It was discovered by Merrill Palmer in 1980.

Production notes:

Reserves:

Additional comments:

References:
MacKevett and others, 1974; Still and others, 1984; Wells and others, 1986; Still and others, 1987; Gilbert and others, 1987; Gilbert and Redman, 1989; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still and others, 1984

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Big Boulder Creek

Site type: Occurrence

ARDF no.: SK038

Latitude: 59.44 **Quadrangle:** SK B-4

Longitude: 136.20

Location description and accuracy:

This occurrence is on Boulder Creek about 0.2 miles upstream from the Haines Highway. It is in the NE1/4, section 22, T. 28 S., R. 54 E. of the Copper River Meridian. It is shown as number 41 by Still and others (1984).

Commodities:

Main: Au

Other: Ag

Ore minerals: Gold

Gangue minerals: Quartz

Geologic description:

Wright (1904 [B 225 and B 236]) cites the presence of placer gold in Boulder Creek stream gravels but doubts that there are sufficient quantities to warrant mining. Still and others (1984) noted that gold was found in stream gravels and boulders that included argillite float and that porphyritic andesite float was present at the mouth of the canyon just above the the alluvial fan near the Haines Highway.

Winkler and MacKevett (1970) collected several bedrock samples, MK 13A, MK 13D-1, and MK 13E, along Boulder Creek below the 1,000 foot elevation. Their description of MK 13A mentions an altered fault zone with quartz pods. The descriptions of MK 13D-1 and MK 13E mention quartz stringers. Sample MK 13A contained 1,500 ppm barium, 300 ppm lanthanum, 500 ppm niobium, 20 ppm tin, 200 ppm yttrium, and greater than 9,999 ppm zirconium. The description by MacKevett and others (1974) of an altered fault zone on Big Boulder Creek mentions fragmented pegmatitic material and apparently refers to the site sampled by MK 13A.

Bedded rocks within the Big Boulder Creek drainage area are variably metamorphosed, metasediments and metavolcanics of the Cheetdeekahyu Group of Redman and others (1985). North of the Klehini River, the metamorphic grade and average grain size of these rocks increases to the north and northeast towards Four Winds Mountain. These rocks have been included in the Four Winds metamorphic complex (Forbes and others, 1987; Gilbert and others, 1987). They are of probable Devonian or Late Triassic age

(Gilbert and others, 1987).

Alteration:

Age of mineralization:
Quaternary placer.

Deposit model:
Quaternary Au placer (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: No

Site Status: Inactive

Workings/exploration:
Worked by hand methods in early 1900's, but no production is documented.

Production notes:
Probably minor, at best.

Reserves:

Additional comments:

References:
Wright, 1904 (B 225); Wright, 1904 (B 236); Winkler and MacKevett, 1970; MacKevett and others, 1974; Berg, 1984; Still and others, 1984; Redman and others, 1985; Forbes and others, 1987; Gilbert and others, 1987.

Primary reference: Still and others, 1984

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Big Boulder

Site type: Occurrence

ARDF no.: SK039

Latitude: 59.44 **Quadrangle:** SK B-4

Longitude: 136.23

Location description and accuracy:

This occurrence is at an elevation of 1,500 feet west of Big Boulder Creek and north of the the Klehini River across from the old Porcupine town site. It is in the south-central part of the section 16, T. 28 S., R. 54 E of the Copper River Meridian. It is shown as number 4 of Still and others (1991). MacKevett and others (1974) show a 'Au?' notation (without further explanation or reference) at the same elevation but approximately 1/2 mile farther to the west on the south facing slope above the Klehini River.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Quartz

Geologic description:

Wright (1904 [B 225 and B 236]) describes this occurrence as a quartz ledge. The brief description of Still and others (1991) is a little unclear, but the prospect appears to be quartz segregations and veins in felsic dikes within slate. The dikes strike north-northwest, dip steeply, are up to 1.3 feet thick, and crop out for up to 60 feet along strike. An adit was driven through a felsic dike for 18 feet where is cuts a quartz band for about 5 feet. None of the samples of quartz and dike rock contained anomalous gold, but they had up to 1.8 ppm silver, 308 ppm lead, 100 ppm tin, 500 ppm arsenic, 700 ppm bismuth, and 900 ppm antimony.

Bedded rocks in the area are metasediments and metavolcanics of the Cheetdeekahyu Group of Redman and others (1985). Their metamorphic grade and average grain size increases to the north and northeast towards Four Winds Mountain. They have been included in the Four Winds metamorphic complex (Forbes and others, 1987; Gilbert and others, 1987). The probable Devonian or Late Triassic age of the Cheetdeekahyu Group (Gilbert and others, 1987) establishes a maximum age for the veins at this prospect. However, if the dike is Cretaceous as are nearby intrusives, then the veins are Cretaceous or younger in age.

Alteration:

Age of mineralization:
Probably Cretaceous or younger based on the age of nearby intrusives (MacKevett and others, 1974; Gilbert and others, 1987).

Deposit model:
Auriferous quartz vein (Cox and Singer, 1986; model 22c or 36a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
22c or 36a

Production Status: None

Site Status: Probably inactive

Workings/exploration:
Still and others (1991) report a shallow adit that, '..was likely driven about 80 years ago.'

Production notes:

Reserves:

Additional comments:

References:
Wright, 1904 (B 225); Wright, 1904 (B 236); MacKevett and others, 1974; Redman and others, 1985; Forbes and others, 1987; Gilbert and others, 1987; Still and others, 1987; Gilbert and Redman, 1989; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (north of Klehini River)

Site type: Occurrence

ARDF no.: SK040

Latitude: 59.44 **Quadrangle:** SK B-4

Longitude: 136.32

Location description and accuracy:

This occurrence is at an elevation of about 1,400 feet approximately 1.6 miles, S71E from the Pleasant Camp border station on the Alaska-British Columbia border. It is in the SE1/4, section 13, T. 28 S., R. 53 E. of the Copper River Meridian. It is defined by sample localities 18 to 21 on figure 2 of Still and others (1984) and sample localities 15, 17 and 18 on figure 5 of Still and others (1987).

Commodities:

Main: Au

Other:

Ore minerals: Pyrite, pyrrhotite

Gangue minerals: Calcite

Geologic description:

This occurrence is defined by several anomalous samples reported by Still and others (1984, 1987). These two reports contain essentially the same data for this area. Metasediments and gossan are noted in the sample descriptions for those grab samples that contained the highest gold values, 0.066 to 0.316 ppm gold. Two sample descriptions are 'felsite with pyrite' and one of these contained 0.013 ppm gold. Another sample was described as 'calcite vein with pyrrhotite' and contained 330 ppm copper. One stream sediment sample contained 0.581 ppm gold.

Bedrock in the area is marble, metasediments and metavolcanics of the Cheetdeekahyu Group of Redman and others (1985). The probable Devonian or Triassic age of these rocks (Gilbert and others, 1987) establishes a maximum age for the mineralization.

Alteration:

Age of mineralization:

No older than the probable Devonian or Triassic age of the host rocks (Gilbert and others, 1987).

Deposit model:
Too little information to assign a model type.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:
MacKevett and others, 1974; Still and others, 1984; Redman and others, 1985; Gilbert and others, 1987; Still and others, 1987.

Primary reference: Still and others, 1984

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Porcupine Creek

Site type: Mine

ARDF no.: SK041

Latitude: 59.41 **Quadrangle:** SK B-4

Longitude: 136.24

Location description and accuracy:

Placer gold mineralization and workings extend for approximately 3 miles along Porcupine Creek from its junction with the Klehini River to just above its junction with McKinley Creek. Cobb (1972 [MF-424]) showed this mining area as location 26 but used the designation to also include gold placer mining on McKinley and Cahoon Creeks. Collectively, these three connected drainages have been the most productive gold placers in the area.

Commodities:

Main: Au

Other: Ag

Ore minerals:

Gangue minerals:

Geologic description:

According to Hoekzema and others (1986), Porcupine Creek is a steep, rapidly downcutting drainage with an average gradient of 350 feet per mile. Three classes of placer deposits exist: 1) abandoned channel and bench deposits, 2) recent stream gravels, and 3) an alluvial fan. The abandoned channel and bench deposits have the highest grade. Gold fineness ranges from 841 to 909 and averages 866 (Hoekzema, 1986). Wright (1904 [B 225 and B 236]) reported gravels in the lower portion of creek to be 40 feet thick. The bottom 2- to 3-foot layer of gravel on top of bedrock contained high gold values and the uppermost 15 to 20 feet of gravel carried good values as well. Bundtzen (1986) notes that Pleistocene ice advances and readvances resulted in at least three, possibly four, bedrock incised channels or terrace levels.

The most likely bedrock sources for placer gold are crosscutting auriferous quartz-sulfide veins associated with altered mafic dikes cutting Porcupine Slate in the McKinley and Cahoon Creek drainages (SK042) (Hoekzema and others, 1986; Wright, 1904 [B 225 and B 236]). This zone of quartz-sulfide veins and altered mafic dikes is part of a larger area of less intensive quartz-sulfide veining that Eakin describes as extending in a northwesterly direction from the Salmon (Tsirku) River, through Porcupine, Glacier, and Jarvis

Creeks to the mountain mass north of the Jarvis Glacier.

Wright (1904 [B 225 and B 236]) refers to three types of gravel deposits in the Porcupine area: creek gravels, side benches and high benches. The creek gravels and side benches are are related to present and recent past fluvial activity. The high benches are older and were deposited during earlier interglacial periods. High benches occur up to 200 feet above the current stream level as on McKinley Creek (SK045). Stream gravels consist of fragments and slabs of slate and boulders of diorite and some greenstone up to 2 or 3 feet in diameter. Hoekzema and others (1986) add alluvial fan gravels at the mouths of Porcupine Creek and Glacier Creek (SK065) to the gravel deposit types recognized by Wright (1904 [B 225 and B 236]).

Alteration:

Age of mineralization:

Quaternary placers.

Deposit model:

Modern stream, paleo-channel and alluvial fan, gold placers (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

39a

Production Status: Yes; small

Site Status: Active?

Workings/exploration:

Several flumes and tunnels were built in early 1900's to divert the creek to allow mining of the creek bed and to supply water for hydraulic methods; Hand methods, sluices, rockers, and a trolley lift were used in early 1900's; A resurgence of activity in 1970's and 1980's saw use of mechanized placer methods (Hoekzema and others, 1986).

Production notes:

The estimated total production from the Porcupine Mining Area from 1898 to 1985, including Christmas (SK062), Nugget (SK048), Porcupine (SK041), Cahoon (SK044), and McKinley (SK046) Creeks, is 79,650 troy ounces of gold. From 1898 to 1906, there were small manual operations producing as much as 9,000 troy ounces per year that were destroyed by flooding in 1906. From 1907 to 1915, mining by the Porcupine Gold Company was conducted using a flume constructed one mile below the junction with McKinley Creek. Production averaged 3,000 troy ounces of gold per year, until the flume was destroyed by a flood in 1915. From 1916 to 1918, the old flume was repaired and a new flume was built. Over 6,000 troy ounces of gold was produced during this period. The flumes were destroyed in the flood of September, 1918. Porcupine Gold Mines, which later became Alaska Sunshine Gold Mining Company, took over in 1926. In 1928, they completed a flume that originated on Porcupine Creek 0.5 miles above the junction with

McKinley Creek and bridged McKinley Creek. Mining commenced in 1929 but closed at the end of the season due to poor returns. After much additional exploration, mining began again in 1935. Work continued into 1936 when the bridge over McKinley Creek was destroyed by a rock slide. As of 1986, there had been only minor, sporadic production since World War II. During times of high gold prices in the 1970's and early 1980's, some mechanized mining was conducted (Hoekzema and others, 1986).

Reserves:

The following is summarized from Hoekzema and others (1986). Three classes of placer deposits exist: 1) abandoned channel and bench deposits, 2) recent stream gravels and, 3) an alluvial fan. Abandoned channel and bench deposits are the highest grade. Five resource areas are estimated to contain a total of 152,000 cubic yards of gravel with grades of 0.0106 or more ounces of gold per cubic yard. Stream channel gravels in lower Porcupine Creek are estimated to contain at least 500,000 cubic yards of material of unknown grade. The alluvial fan consists of 12 to 15 feet of recent stream gravels overlying an unknown thickness of older gravels. The alluvial fan is estimated to contain 6,000,000 cubic yards of material, but much is probably uneconomic. Alluvial fan samples contained from a trace to 0.11 troy ounces of gold per cubic yard. There is potential for older high grade gold bearing channels beneath the alluvial fan.

Additional comments:

References:

Wright, 1904 (B 225); Wright, 1904 (B 236); Eakin, 1918; Eakin, 1919; Smith, 1933; Beatty, 1937; Smith, 1941; Williams, 1960; Koschmann and Bergendahl, 1968; Winkler and MacKevett, 1970; Cobb, 1972 (MF 424); MacKevett and others, 1974; Roppel, 1975; Cobb, 1978 (OF 78-316); Berg, 1984; Still and others, 1984; Bundtzen, 1986; Hoekzema and others, 1986; Still and others, 1987; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Hoekzema and others, 1986

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (around mouth of Cahoon Creek)

Site type: Occurrence

ARDF no.: SK042

Latitude: 59.39 **Quadrangle:** SK B-4

Longitude: 136.24

Location description and accuracy:

The location of this occurrence, in the center of section 1, T. 29 S., R. 54 E. of the Copper River Meridian, is somewhat arbitrary and applies to a broad northwest trending band of mineralization. It is taken from Eakin (1919) who describes a northwest trending band of quartz-sulfide veinlets in slate that is 1,200 feet thick and cuts across Cahoon Creek near its mouth. This band is contained within a larger zone of sporadic quartz-sulfide veins and stringers that Eakin describes as extending in a northwesterly direction from the Salmon (Tsirku) River, through Porcupine, Glacier, and Jarvis Creeks to the mountain mass north of the Jarvis Glacier.

Commodities:

Main: Au

Other: Ag

Ore minerals: Chalcopyrite, galena, gold, pyrite, sphalerite

Gangue minerals: Calcite, quartz

Geologic description:

Eakin (1918 and 1919) describes a nearly 1,200-foot-wide band of abundant quartz-sulfide veining in slate that cuts across Cahoon Creek near its mouth. He further notes that this zone of abundant veining occurs within a northwest-trending larger area of sediment hosted, discontinuous lode mineralization that consist of quartz, iron sulfides, and calcite veins, veinlets, and lenses that extends from south of the Salmon (Tsirku) River across the basins of Porcupine, Glacier, and Jarvis Creeks and into the mountain mass north of the Jarvis Glacier. Eakin infers that this larger zone of veining is the source of the placer gold in the Klehini and Salmon (Tsirku) River basins.

Wright (1904 [B 225 and B 236]) noted that this zone of mineralization occurs in sedimentary rocks in the Porcupine area that are all more or less mineralized by veins of quartz and calcite. Iron sulfides that occur as films and conformable lenticular masses up to a few inches thick form an interrupted zone of mineralization in the southern portion of the sedimentary series. Quartz veins are not abundant and are often stringers parallel to the cleavage of the slate. The few crosscutting quartz veins carry galena, sphalerite, and

minor chalcopyrite. Although these quartz-sulfide veins are quite narrow, they often persist for considerable distances. Light-brown-weathering calcite veins are more numerous than quartz veins, are often more than a foot thick; they may include pyrite cubes up to an inch across. Gold has been reported from veins of this nature up McKinley Creek ; see (SK046) and (SK047).

MacKevett and others (1974) observed that, 'Lode occurrences are localized mainly in or near the slate in the central part of the B-4 quadrangle, and the placers are mainly along streams that drain the slate terrane.'

Alteration:

Some of the larger auriferous quartz-sulfide veins in the vicinity are associated with mafic dikes that have been altered to silica-carbonate rocks (see Golden Eagle (SK047)).

Age of mineralization:

Unknown, but probably Cretaceous or younger based on the age of intrusives in the area (MacKevett and others, 1974).

Deposit model:

Auriferous quartz-sulfide veins in slate and in silica-carbonate-altered mafic dikes (Cox and Singer, 1986; model 22c).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

22c

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:

Wright, 1904 (B 225); Wright, 1904 (B 236); Eakin, 1918; Eakin, 1919; Stewart, 1926; Smith, 1933; Beatty, 1937; Smith, 1941; Williams, 1960; Koschmann and Bergendahl, 1968; Winkler and MacKevett, 1970; Cobb, 1972 (MF 424); Cobb, 1973 (B 1374); MacKevett and others, 1974; Roppel, 1975; Cobb, 1978 (OF 78-316); Berg, 1984; Still and others, 1984; Bundtzen, 1986; Hoekzema and others, 1986; Still and others, 1987; Still and others, 1991.

Primary reference: Hoekzema and others, 1986

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Annex Number 1

Site type: Prospect

ARDF no.: SK043

Latitude: 59.39 **Quadrangle:** SK B-4

Longitude: 136.26

Location description and accuracy:

This prospect is located in the cliffs on the west side of Porcupine Creek approximately 0.7 miles up Porcupine Creek from its junction with McKinley Creek. It is identified as 'Annex Number 1' in Still and others (1991).

Commodities:

Main: Ag, Au

Other: Sn, Zn

Ore minerals: Pyrite

Gangue minerals: Quartz

Geologic description:

The following description is from Still and others (1991). Pyrite-bearing quartz veins are associated with tan to gray altered dikes. Samples of narrow, discontinuous veins in the margins of dikes and in slate contain from 0.2 to 114.1 ppm gold. Samples of dike and slate contain from 0.005 ppm to 0.315 ppm gold. Selected high-grade (vein?) samples also contain up to 9 ppm silver, 840 ppm zinc, 100 ppm tin, and 0.8% arsenic.

These quartz-sulfide veins occur within the northwest-trending zone of quartz-sulfide veining in sediments and slates in the Skagway B-4 quadrangle that is described by Wright (1904 [B 225 and B 236], Eakin (1918 and 1919), and MacKevett and others (1974). Other similar occurrences in the area include the McKinley Falls (SK046) and Golden Eagle (SK047) prospects, and the unnamed zone of veining near the mouth of Cahoon Creek (SK042). This prospect may be within the zone of veining referred to in SK042.

Alteration:

Based on similarity to the Golden Eagle (SK047) and other prospects in the area, the tan to gray altered dikes are probably mafic dikes that have been altered to silica-carbonate rock.

Age of mineralization:

Unknown, but probably Cretaceous or younger based on age of intrusives in area (MacKevett and others, 1974).

Deposit model:
There is little information, but the brief description by Still and others (1991) mentions polymetallic veins in dikes (Cox and Singer, 1986; model 22c).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
22c

Production Status: None

Site Status: Probably inactive

Workings/exploration:
This prospect was discovered by Jerry Fabrizio, a local prospector, in 1983 (Still and others, 1991).

Production notes:

Reserves:

Additional comments:

References:
Wright, 1904 (B 225); Wright, 1904 (B 236); Eakin, 1918; Eakin, 1919; MacKevett and others, 1974; Gilbert and Redman, 1989; Still and others, 1991.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Cahoon Creek

Site type: Mine

ARDF no.: SK044

Latitude: 59.38 **Quadrangle:** SK B-4

Longitude: 136.25

Location description and accuracy:

These placer gold mine workings extend approximately 2 miles upstream on Cahoon Creek from its junction with McKinley Creek. Cobb (1972 [MF 424]) included them in his location 26 with other placer gold workings on Porcupine and McKinley Creeks.

Commodities:

Main: Au

Other: Ag

Ore minerals: Gold

Gangue minerals:

Geologic description:

According to Hoekzema and others (1986), the lower 0.5 miles of Cahoon Creek were extensively mined by the Cahoon Creek Mining Company from 1908 to 1913. Cahoon Creek is a steep northeast flowing tributary to McKinley Creek with an average gradient of 650 feet per mile. Very little gravel is present in the channel and much of the creek is on bedrock. There is some potential for abandoned channel or bench deposits, but these are generally covered by colluvium and avalanche debris. Gold concentration increases toward the junction with McKinley Creek. Samples contained from less than 0.0004 to 0.045 ounces of gold per cubic yard. The gold is nuggety and 83% is less than 0.02 inches in size. Panned concentrates contained greater than 70% magnetite, with minor pyrite, zircon, and garnet.

The Cahoon Creek placer mineralization lies within the northwest-trending zone of quartz-sulfide veining in sediments and slates in the Skagway B-4 quadrangle that is described by Wright (1904 [B 225 and B 236}), Eakin (1918 and 1919), and MacKevett and others (1974) and considered to be the source of placer gold in this area.

Alteration:

Age of mineralization:

Quaternary.

Deposit model:
Modern stream placer (Cox and Singer, 1986: model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
The lower 0.5 miles of Cahoon Creek were extensively mined by the Cahoon Creek Mining Company from 1908 to 1913 (Hoekzema and others, 1986). A little placer mining was done at the head of Cahoon Creek in the early days of the camp, but apparently with little success (Eakin, 1918 and 1919).

Production notes:
Hoekzema and others (1986) estimate 79,650 ounces for gold was produced from the Porcupine area that includes Cahoon Creek, but separate production figures for Cahoon Creek are not available. See Porcupine Creek (SK041) for a more detailed history of production in the Porcupine area.

Reserves:
None reported, but Hoekzema and others, 1986, note that an abandoned channel about 0.25 miles upstream from the current junction with McKinley Creek should be investigated.

Additional comments:

References:
Wright, 1904 (B 225); Wright, 1904 (B 236); Eakin, 1918; Eakin, 1919; Brooks and Capps, 1924; Winkler and MacKevett, 1970; Cobb, 1972 (MF 424); MacKevett and others, 1974; Hoekzema and others, 1986; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Hoekzema and others, 1986

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): McKinley Creek

Site type: Mine

ARDF no.: SK045

Latitude: 59.38 **Quadrangle:** SK B-4

Longitude: 136.23

Location description and accuracy:

These placer gold mine workings extend at least 2 miles upstream along McKinley Creek from its junction with Porcupine Creek. Cobb (1972 [MF 424]) included them in his location 26 with other placer gold workings on Porcupine and Cahoon Creeks.

Commodities:

Main: Au

Other: Ag

Ore minerals: Gold

Gangue minerals:

Geologic description:

Gold occurs in modern stream gravels and in older gravels in a high bench deposit on the south side of the valley 200 feet above the modern creek level (Wright, 1904 [B 225 and B 236]). According to Wright , mining of a bench deposit 150 feet above the creek was complicated by a cap of, 'gravel cement 3 feet thick,' that could not be disintegrated with a hydraulic nozzle and was difficult to break with even a hammer and pick.

The following is summarized from Hoekzema and others (1986). McKinley Creek is the largest northwest flowing tributary to Porcupine Creek. It has an average gradient of nearly 500 feet per mile. The Golden Eagle lode gold deposit (SK047) is located adjacent to the creek at an elevation of 1,800 feet approximately 2 miles above its junction with Porcupine Creek. Free gold can be panned from sulfides in the lode deposit. Reconnaissance placer samples collected above the lode deposit contained from less than 0.0004 to 0.0056 ounces gold per cubic yard. Samples from below the lode deposit contained from less than 0.0004 to 0.0539 ounces gold per cubic yard. Placer gold consists of rough, angular fragments. Placer gold from McKinley and Cahoon Creeks ranges from 786 to to 859 fine and averages 821. Gold from two lode gold sources in the area averages 750 fine. Placer gold fineness increases downstream from the probable lode gold source. Pan concentrates contain up to 30% magnetite, 10% pyrite, and minor chalcopyrite, galena, garnet, scheelite, sphalerite, and zircon.

The McKinley Creek placer mineralization lies within the northwest trending zone of

quartz-sulfide veining in sediments and slates in the Skagway B-4 quadrangle that is described by Wright (1904 [B 225 and B 236]), Eakin (1918 and 1919), and MacKevett and others (1974) and considered to be the source of placer gold in this area.

Alteration:

Age of mineralization:
Quaternary placer.

Deposit model:
Placer gold deposits that include mineralized modern stream gravels, paleo-stream channels, and bench gravels (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Active?

Workings/exploration:
Hoekzema and others (1986) state that placer mining on lower McKinley Creek (below Cahoon Creek) began at about the same time as on Porcupine Creek (1898) and that most of this section was mined out by 1904. However, Eakin (1918, 1919) states that little mining was conducted on the Porcupine Creek tributaries before 1908 when the Cahoon Creek Gold Mining Co. began work on Cahoon and McKinley Creeks. The stream was diverted into a wooden flume and the creek bed was hydraulically mined.

Hoekzema and others (1986) also indicated that from 1903 to 1916 old channels of McKinley Creek up to 200 feet above the current creek level were mined by Cahoon Creek Mining Company. A tunnel dug in 1916 diverted the stream to Porcupine Creek and allowed mining of a plunge pool and the lowermost section of McKinley Creek immediately above Porcupine Creek. Hydraulic booming techniques were reportedly used on upper McKinley Creek above Cahoon Creek in 1926. Suction dredges and hand techniques were used recently in upper McKinley Creek.

Production notes:
A total of at least 79,650 ounces of gold was produced jointly from Porcupine (SK041), Cahoon (SK044), and McKinley Creeks, mostly prior to 1926. Approximately 4,500 ounces of gold were taken from a plunge pool at the base of McKinley Falls located at the junction of McKinley and Porcupine Creeks (Hoekzema and others, 1986) (See Production notes for Porcupine Creek, SK041) Significant production has not been reported from upper McKinley Creek above its junction with Cahoon Creek (Hoekzema and others, 1986).

Reserves:
Hoekzema and others (1986) identified resources 1 mile upstream from the junction

with Cahoon Creek that consist of narrow point bar and channel deposits totaling approximately 20,000 cubic yards with from 0.001 to 0.054 ounces of gold per cubic yard. The section below Cahoon Creek has been mined several times and grades of the remaining gravels are unknown.

Additional comments:

References:

Wright, 1904 (B 225); Wright, 1904 (B 236); Eakin, 1918; Eakin, 1919; Stewart, 1926; Beatty, 1937; Winkler and MacKevett, 1970; Cobb, 1972 (MF 424); MacKevett and others, 1974; Cobb, 1978 (OF 78-316); Berg, 1984; Still and others, 1984; Bundtzen, 1986; Bundtzen and others, 1986; Hoekzema and others, 1986; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Hoekzema and others, 1986

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): McKinley Creek Falls

Site type: Prospect

ARDF no.: SK046

Latitude: 59.37 **Quadrangle:** SK B-4

Longitude: 136.23

Location description and accuracy:

This prospect is at an elevation of approximately 1,600 feet near the base of a falls in the steep-walled canyon of McKinley Creek . It is on the eastern edge of the NE1/4, section 12, T. 29 S., R. 54 E. of the Copper River Meridian. It is shown as location 20 by Still and others (1991).

Commodities:

Main: Au, Zn

Other:

Ore minerals: Gold, sphalerite

Gangue minerals: Quartz

Geologic description:

The rocks in the area consist of slate with interbedded limestone that is cut by altered, tan dikes. Narrow, discontinuous quartz-sphalerite veins or silicified bands are in the dikes and, to a lesser extent, in the slate and limestone. Selected high-grade samples of quartz-sphalerite veins in dikes, contained up to 13.4% zinc and 8.9 ppm gold. A 2.5-foot-long chip sample across a limy silicified band in limy slate contained 24.8 ppm gold and 280 ppm zinc (Gilbert and others, 1991; Still and others, 1991).

This prospect is similar to the Golden Eagle prospect (SK047). It occurs within a northwest-trending zone of quartz-sulfide veining in sediments and slates in the Skagway B-4 quadrangle that is described by Wright (1904 [B 225 and B 236]), Eakin (1918 and 1919), and MacKevett and others (1974) and is considered to be the source of placer gold in this area.

Alteration:

Silica-carbonate units which are cut by or parallel the quartz-sulfide veins are probably altered mafic dikes (Still and others, 1991). Questionable mariposite may be due to alteration of mafic minerals (Bundtzen and Clautice, 1986).

Age of mineralization:

Unknown, but probably Cretaceous or younger based on age of intrusives in area (MacKevett and others, 1974).

Deposit model:

There is little information but the brief description by Still and others (1991) who refer to polymetallic veins in dikes and replacement mineralization in adjacent limy sediments (Cox and Singer, 1986; models 22c and 19a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

22c and 19a

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:

Wright, 1904 (B 225); Wright, 1904 (B 236); Eakin, 1918; Eakin, 1919; MacKevett and others, 1974; Gilbert and Redman, 1989; Gilbert and others, 1991; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Golden Eagle; McKinley Creek; Vug

Site type: Mine

ARDF no.: SK047

Latitude: 59.37 **Quadrangle:** SK B-4

Longitude: 136.22

Location description and accuracy:

This small mine is located at an elevation of between 1,820 and 1,850 feet on the west bank of McKinley Creek, about 2 miles above its junction with Porcupine Creek. it is shown as location 106 by Still and others (1984).

Commodities:

Main: Au

Other: Ag, Zn

Ore minerals: Arsenopyrite, gold, pyrite, pyrrhotite, sphalerite

Gangue minerals: Quartz, native sulfur

Geologic description:

The following is summarized from Bundtzen and Clautice (1986). In the vicinity of the Golden Eagle occurrence, the Porcupine Slate that host this prospect is a dark-gray, pyrite-rich, micaceous, carbonaceous slate to phyllite, with minor siltstone and metasandstone. Tan to brown, micaceous silica-carbonate bands are either beds or altered mafic dikes. The Golden Eagle lode is a quartz-pyrite-pyrrhotite-sphalerite fissure vein that cuts a 11- to 15-foot-wide, tan, silica-carbonate band. On the west side of McKinley Creek, the vein ranges from 3 inches to 27 inches thick, strikes N35-65W, and dips steeply northeast to vertical. The hanging wall of the vein contains a highly gossanous 3.5-foot-long by 0.5 to -1-foot wide wedge of bronze-colored pyrite, pyrrhotite, and minor sphalerite. Oxidation of the sulfides has left a vug of euhedral quartz crystals, ferricrete gossan, and local concentrations of very fine-grained free gold. Native sulfur spheres and masses up to 2 inches in diameter envelope clots of sulfide grains, particularly sphalerite. Vertically higher on the vein exposure, smaller pods of massive to disseminated pyrite, pyrrhotite, and minor sphalerite are localized along the hanging wall. The average sulfide content of the vein is only 5% to 8%. At least two phases of silica injection are apparent. The weighted average of six samples taken along 14 feet of exposed vein is 0.653 ounce of gold per ton, 0.227 ounces of silver per ton, and 0.45% zinc, with traces of copper, lead, and cobalt. Grab samples of five similar, smaller, quartz-sulfide veins downstream from the Golden Eagle lode averaged 0.495 ounce of gold per ton, and 0.043% zinc, with

traces of cobalt, copper, and lead.

Still and others (1991) assert that the silica-carbonate bands are altered dikes of original mafic composition. Most of the quartz veins are transverse fracture fillings confined to the silica-carbonate-altered dikes.

This small mine is within the northwest-trending zone of quartz-sulfide veining in sediments and slates in the Skagway B-4 quadrangle that is described by Wright (1904 [B 225 and B 236]), Eakin (1918 and 1919), and MacKevett and others (1974) and considered to be the source of placer gold in the area. These particular veins are probably one of the major gold sources for the McKinley Creek placer deposit (SK045) as little placer gold is found above this lode deposit.

Alteration:

The silica-carbonate units which are cut by or parallel the quartz-sulfide veins are probably altered mafic dikes (Still and others, 1991). Questionable mariposite, which may result from the alteration of mafic minerals, is also described (Bundtzen and Clautice, 1986).

Age of mineralization:

Unknown, but probably Cretaceous or younger based on the age of intrusives in area (MacKevett and others, 1974).

Deposit model:

Auriferous quartz-sulfide vein (Cox and Singer, 1986; model 22c).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

22c

Production Status: None

Site Status: Active?

Workings/exploration:

Production notes:

Over 150 pounds of sulfides were reported mined from a large vug on the Vug vein from about 1983 to 1985 with the recovery of about 0.5 troy ounces of gold (Still and others, 1991).

Reserves:

Still and others (1991) concluded that, 'Except for the Vug vein, the 30 or so quartz ladder veins examined on this prospect are not large enough or close enough to be considered for mine development.' 'The Vug vein may indicate potential for isolated spots of high-grade gold mineralization...', '...values in the quartz veins do encourage further exploration for faults or other structures...', and 'The gold values in the slate suggest a possibility of low-grade large-volume gold mineralization.'

Additional comments:

References:

Wright, 1904 (B 225); Wright, 1904 (B 236); Eakin, 1918; Eakin, 1919; MacKevett and others, 1974; Still and others, 1984; Bundtzen and Clautice, 1986; Hoekzema and others, 1986; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Bundtzen and Clautice, 1986

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Nugget Creek

Site type: Mine

ARDF no.: SK048

Latitude: 59.29 **Quadrangle:** SK B-4

Longitude: 136.18

Location description and accuracy:

The location of this mine is somewhat arbitrary as gold placer mining occurred at various localities along Nugget Creek. It is plotted approximately 1/2 mile up Nugget Creek from its junction with the Tsirku River. It is in the SE1/4, section 5, T. 30 S., R. 55 E. of the Copper River Meridian. It is shown as location 30 by Cobb (1972 [MF 424]) and sample location 180 by Still and others (1984).

Commodities:

Main: Au

Other: W

Ore minerals: Gold

Gangue minerals:

Geologic description:

Some gold was mined on Nugget Creek beginning in 1899 and there has been sporadic mining since. Production has probably been small (Hoekzema and others, 1986). Wright (1904 [B 225 and B 236]) describes the deposit as primarily creek-bed gravels and low side-bench gravels. Deposits in the creek occur as rich pockets in potholes. The low-bench deposits are usually very narrow and from the bottom upward, typically consist of a 2-foot layer of glacial mud, a foot or more of cemented slate wash, a 10-foot bed of pay dirt, and a few feet of colluvium. Many large blocks of diorite occur in the pay gravels and substantially add to the cost of mining. However, Hoekzema and others (1986) also cite the presence of abandoned channels at higher elevations on the east side of the creek and an alluvial fan at the mouth of the creek. They report that alluvium in the lower canyon is 12 to 20 feet deep and that gold is found on or near bedrock,; little gold is found in the overlying gravels. The best value obtained by the U.S. Bureau of Mines contained 0.0138 ounces of gold per cubic yard in a sample collected from an abandoned channel adjacent to the Tsirku River. Gravel resources in the existing stream channel are small but have been shown to contain coarse gold by recent suction dredge operations. The average stream gradient is over 900 feet per mile.

The Nugget Creek placer mineralization lies within a northwest-trending zone of

quartz-sulfide veining in sediments and slates in the Skagway B-4 quadrangle described by Wright (1904 [B 225 and B 236], Eakin (1918 and 1919), and MacKevett and others (1974) and considered to be the source of placer gold in this area.

Alteration:

Age of mineralization:
Quaternary placer.

Deposit model:
Alluvial fan and paleo-channel placer deposits (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Placer gold was discovered in 1899 but there was no development until 1902 (Wright, 1904 [B 236]). Sporadic mining occurred in 1902 to 1913, 1929, and since 1980 (Hoekzema and others, 1986). Remains of a small hydraulic plant exist on east side of creek 1.5 miles above junction with Tsirku River. A flume was used to divert the creek between 1902 and 1909 for hydraulic methods (Hoekzema and others, 1986). Gravels in the lower section of the Nugget Creek canyon were tested with suction dredges between 1980 and 1985 with encouraging results. The alluvial fan at the mouth of Nugget Creek was patented in 1934 (Hoekzema and others, 1986).

Production notes:
Approximately 350 ounces of gold was produced by small hydraulic operations between 1902 and 1909 (Eakin, 1919).

Reserves:
A significant but untested, identified resource exists in the alluvial fan at the mouth of the creek which coalesces with the fan at the mouth of Cottonwood Creek to the west. Abandoned channels that may host placer gold have been identified in the fan between Cottonwood and Nugget Creeks (Hoekzema and others, 1986).

Additional comments:

References:
Wright, 1904 (B 255); Wright, 1904 (B 236); Eakin, 1918; Eakin, 1919; Cobb, 1972 (MF 424); Cobb, 1978 (OF 78-316); Berg, 1984; Still and others, 1984; Redman and others, 1985; Hoekzema and others, 1986; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Hoekzema and others, 1986

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Cottonwood Creek

Site type: Prospect

ARDF no.: SK049

Latitude: 59.29 **Quadrangle:** SK B-4

Longitude: 136.21

Location description and accuracy:

The location is plotted where Cottonwood Creek flattens and forms an alluvial fan on the northern side of the Tsirku River, about 1 mile northeast of the terminus of the Le Blondeau Glacier. It is shown as location 29 by Cobb (1974 [MF 424]).

Commodities:

Main: Au

Other: W

Ore minerals: Gold

Gangue minerals:

Geologic description:

Placer gold was discovered on Cottonwood Creek in 1899. Although encouraging amounts of gold have been found, none has been produced in significant amounts. Gravel resources in the creek channel are limited due to the steep gradient and narrow bedrock canyon. The average gradient is 750 feet per mile. A significant but untested identified resource exists in the alluvial fan at the mouth of the creek which coalesces with the fan at the mouth of Nugget Creek to the east. Abandoned channels, which may host placer gold have been identified in the fan between Cottonwood and Nugget Creeks. Reconnaissance samples contained up to 0.0005 ounces of gold per cubic yard and pan concentrates contained 10-20% magnetite, up to 10% pyrite, and minor amounts of garnet, zircon, and scheelite. (Hoekzema and others, 1986).

The Cottonwood Creek placer lies within a northwest-trending zone of quartz-sulfide veining in sediments and slates in the Skagway B-4 quadrangle described by Wright (1904 [B 225 and B 236]), Eakin (1918 and 1919), and MacKevett and others (1974) and considered to be the source of placer gold in this area.

Alteration:

Age of mineralization:

Quaternary placer.

Deposit model:
Placer in alluvial fans and paleo-channels (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: No

Site Status: Inactive

Workings/exploration:
Hoekzema and others (1986) report that placer gold was discovered on Cottonwood Creek in 1899 but gold was never produced in significant amounts. The alluvial fan extending along the northern edge of the Tsirku River from Cottonwood Creek to below Nugget Creek was prospected with encouraging results prior to 1912 and a company was formed to dredge the alluvial gravels. Fifty claims were staked to cover the fan but the ground was abandoned in 1916. Portions of the Cottonwood-Nugget Creek fan were patented in 1934.

Production notes:
No significant amount of gold produced.

Reserves:

Additional comments:

References:
Wright, 1904 (B 225); Wright, 1904 (B 236); Brooks, 1913; Eakin, 1918; Eakin, 1919; Cobb, 1972 (MF 424); MacKevett and others, 1974; Berg, 1984; Hoekzema and others, 1986; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Hoekzema and others, 1986

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Le Blondeau

Site type: Prospect

ARDF no.: SK050

Latitude: 59.26 **Quadrangle:** SK B-4

Longitude: 136.24

Location description and accuracy:

This prospect is about 1/4 by 1/2 mile in area. Its approximate center is at an elevation of about 1,500 feet on a sharp ridge just west of the terminus of the Le Blondeau Glacier and south of the Tsirku River. It is on the the south-central edge of the section 13, T. 30 S., R. 54 E. of the Copper River Meridian. It is shown as location 26 on sheet 1 of Still and others (1991) and and locations F70 to F72 on sheet 1 of Gilbert and others (1991).

Commodities:

Main: Ag, Au

Other: Co

Ore minerals: Pyrrhotite

Gangue minerals: Quartz

Geologic description:

According to Still and others (1991), this prospect consists of irregular quartz veins up to 0.8 feet wide and 50 feet long that are exposed near the face of the retreating Le Blondeau Glacier. The veins cut bedding and are hosted in dikes and metachert. Vein samples contain up to 1.561 ppm gold, 2.4 ppm silver, and 251 ppm cobalt . The veins are probably of Cretaceous age or younger based on the age of a nearby quartz diorite to granodiorite intrusion (MacKevett and others, 1974; Gilbert, 1988).

Still and others (1991) also note that 'The snout of this (Le Blondeau) glacier is the site of some limited placer activity, including the staking of placer claims' but there is no record of any significant production.

Alteration:

Age of mineralization:

The age is unknown but is probably Cretaceous or younger based on the age of a nearby intrusion (MacKevett and others, 1974; Gilbert, 1988).

Deposit model:

There is little information but Still and others (1991) refer to polymetallic veins in dikes and adjacent metacherts (Cox and Singer, 1986; model 22c).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
22c

Production Status: None

Site Status: Active?

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:
MacKevett and others, 1974; Gilbert, 1988; Gilbert and others, 1991; Still and others, 1991.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Haines Iron

Site type: Prospect

ARDF no.: SK051

Latitude: 59.25 **Quadrangle:** SK A-2

Longitude: 135.58

Location description and accuracy:

This prospect is located about 2 miles west of Haines on the northern edge of the Haines Highway in about the middle of section 28, T. 30 S., R. 59 E. of the Copper River Meridian. It is shown as location 18 of Cobb (1972 [MF 424]).

Commodities:

Main: Fe, Ti

Other:

Ore minerals: Ilmenite, titaniferous magnetite

Gangue minerals: Amphibole, calcite, chlorite, epidote, feldspar, pyroxene

Geologic description:

This prospect occurs within what Still and others (1991) call the Haines mafic-ultramafic complex. They believe this complex to be of similar character and the same age as the Cretaceous, Klukwan mafic-ultramafic complex (SK030) (MacKevett and others,1974). Knopf (1910) describes this prospect as pyroxenite that contains magnetite intergrown with ilmenite in grains as much as 0.25 in diameter. The pyroxenite is in contact with epidote diorite and metabasalt. He estimates the resource at several billion tons of material containing less than 10% magnetite.

Alteration:

Chloritization.

Age of mineralization:

Probably Cretaceous based on Still and others' (1991) correlation of the Haines mafic-ultramafic complex with the Cretaceous, Klukwan mafic-ultramafic complex (SK030) to the north (MacKevett and others, 1974).

Deposit model:

Disseminated magnetite and ilmenite in a pyroxenite (Cox and Singer, 1986; model 9).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
9

Production Status: No

Site Status: Inactive

Workings/exploration:
A 100-foot tunnel that was driven in 1906 is now caved (Robertson, 1956).

Production notes:

Reserves:
'Widely spaced dip needle traverses and sampling along the shore and in roadcuts in the early 1950's indicated that the Haines deposits contained several billion tons of low-grade magnetite-bearing pyroxenite. Data are inadequate to estimate the grade, but the magnetic iron content seems to be less than 10%' (Berg and Cobb, 1967).

Additional comments:

References:
Wright, 1909; Knopf, 1910; Robertson, 1956; Berg and Cobb, 1967; Cobb, 1972 (MF 424); MacKevett and others, 1974; Cobb, 1978 (OF 78-316); Berg, 1984; Still and others, 1991.

Primary reference: Robertson, 1956

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (on headwater tributary to Porcupine Creek)

Site type: Occurrence

ARDF no.: SK052

Latitude: 59.33 **Quadrangle:** SK B-4

Longitude: 136.28

Location description and accuracy:

This occurrence is at an elevation of approximately 3,500 feet on the east side of an unnamed headwater tributary to Porcupine Creek near the divide to Cottonwood Creek. It is in the the SW1/4, section 23, T. 29 S., R. 54 E. of the Copper River Meridian. It is shown as location 146 by Still and others (1987) and as site R by Gilbert and Redman (1989) who informally referred to it as the 'Porcupine Roof Pendant'.

Commodities:

Main: Ag, Au

Other: Cu

Ore minerals: Pyrite

Gangue minerals:

Geologic description:

According to Still and others (1991), this occurrence is a mineralized, 400 foot by 1,000 foot, roof pendant surrounded by diorite. The pendant consists of metamorphosed slate and limestone that form bands of garnet and diopside at some locations. Samples from the pendant contained up to 0.068 ppm gold, 1.1 ppm silver, 192 ppm zinc, and 230 ppm copper (Gilbert and others, 1991), and a sample of gossan rubble with 20% pyrite collected 500 feet below the pendant contained 6.33 ppm gold, 18.2 ppm silver, and 515 ppm copper (Still and others, 1991). The metamorphosed slate and limestone are of probable Paleozoic age (MacKevett and others, 1974). The bands of garnet and diopside and the mineralization are probably due to to contact metasomatism by the surrounding Cretaceous diorite (MacKevett and others, 1974).

Alteration:

Development of calc-silicate minerals.

Age of mineralization:

Probably Cretaceous or younger based on the age of the surrounding diorite (MacKevett and others, 1974).

Deposit model:
Based on limited information, this is probably a skarn related occurrence (Cox and Singer, 1986; model 18b? or 18c?).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
18b? or 18c?

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:
MacKevett and others, 1974; Still and others, 1987; Gilbert and Redman, 1989; Gilbert and others, 1991; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (near Peak 5420)

Site type: Prospect

ARDF no.: SK053

Latitude: 59.31 **Quadrangle:** SK B-4

Longitude: 136.31

Location description and accuracy:

This prospect is at the head of Porcupine Creek in prominent cliff exposures between the elevations of 3,600 and 5,400 feet on the northwest side of Peak 5420. It was informally termed the 'Quartz Swarm' prospect by Still and others (1991).

Commodities:

Main: Ag

Other: As, Au, Ba, Cu, Ni, Sb, Zn

Ore minerals: Chalcopyrite, pyrrhotite

Gangue minerals: Quartz

Geologic description:

According to Still and others (1991), this prospect was discovered by Merril Palmer in 1984. It consists of swarms of quartz veins in slate and metabasalt exposed in prominent cliffs that (like SK052) appear to be in a roof pendant surrounded by diorite. The veins average about 0.5 to 1.5 feet thick and extend for hundreds of feet along strike. The vein swarms are many hundreds of feet across and extend for more than a thousand feet vertically. Sixty samples were collected from the veins and surrounding wall rocks. Gold values were generally low; 6 samples, mostly of quartz veins, contained 0.005 to 0.09 ppm gold. The 60 samples also contained up to 2.4 ppm silver, 390 ppm zinc, 150 ppm copper, 3,000 ppm barium, 700 ppm arsenic, 200 ppm nickel, and 3,000 ppm antimony. Samples collected through 1,500 feet of elevation and 4,000 feet across structure showed no potentially economic gold values.

The sedimentary and basaltic protoliths to the slate and metabasalt are Paleozoic in age . The veins and mineralization are probably Cretaceous or younger in age, based on their probable genetic relationship to the surrounding diorite (MacKevett and others, 1974).

Alteration:

Age of mineralization:

Probably Cretaceous or younger based on the age of the surrounding diorite (MacKevett

and others, 1974).

Deposit model:
Based on limited information, these are probably polymetallic quartz veins (Cox and Singer, 1986; model 22c).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
22c

Production Status: None

Site Status: Probably inactive

Workings/exploration:
Discovered by Merill Palmer in 1984.

Production notes:

Reserves:

Additional comments:

References:
MacKevett and others, 1974; Still and others, 1984; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (near Peak 4694)

Site type: Occurrence

ARDF no.: SK054

Latitude: 59.33 **Quadrangle:** SK B-4

Longitude: 136.33

Location description and accuracy:
This occurrence is located at the head of Porcupine Creek, 0.3 miles southeast of Peak 4694 at an elevation of about 3,800 feet. It is shown as number 132 by Still and others (1984).

Commodities:

Main: Ag, Au, Cu

Other:

Ore minerals: Chalcopyrite, malachite, pyrite, pyrrhotite

Gangue minerals: Quartz

Geologic description:
The site of an isolated sample of chalcopyrite-bearing quartz float with malachite that contained 49 ppm gold, 74 ppm silver, and 1% copper. (Still and others, 1984). It occurs within a Cretaceous diorite (MacKevett and others, 1974) but may be associated with a small pendant within the diorite, like SK053 or SK052.

Alteration:

Age of mineralization:
Probably Cretaceous or younger, based on the age of the surrounding diorite (MacKevett and others, 1974).

Deposit model:
There is too little information to assign a model type.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:

MacKevett and others, 1974; Still and others, 1984; Redman and others, 1985; Still and others, 1991.

Primary reference: Still and others, 1984

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Claire Bear; Clair Bear

Site type: Occurrence

ARDF no.: SK055

Latitude: 59.35 **Quadrangle:** SK B-4

Longitude: 136.32

Location description and accuracy:

This occurrence is approximately 2.1 miles, S60E from Flower Mountain at an elevation of 3,500 to 3,700 feet. It is in the NE1/4, section 21, T. 29 S., R. 54 E. of the Copper River Meridian. It is shown as numbers 128 to 130 by Still and others (1984); site H by Still and others (1987); and site Q by Gilbert and Redman (1989).

Commodities:

Main: Ag, Co, Cu

Other: Au, Bi, Ni, Sb, Sn

Ore minerals: Chalcopyrite, pyrite, pyrrhotite

Gangue minerals:

Geologic description:

According to Still and others (1984), this occurrence is in a roof pendant of slate, limestone, and volcanic rocks in diorite. Bedrock samples of a lens of massive sulfides at a dike-limestone contact, and similar float material, contained up to 56.2 ppm silver, 2,290 ppm copper, 1,070 ppm cobalt, 700 ppm tin, 1,000 ppm arsenic, 1,000 ppm bismuth and 7,000 ppm antimony. Still and others (1991) describe the mineralization as, '..narrow, discontinuous pyrrhotite-pyrite-chalcopyrite lenses in marble within the contact aureole of Early Cretaceous quartz diorite - tonalite.' The mineralization is probably Cretaceous, based on the age of the intrusive (MaKevett and others, 1974; Still and others 1991).

Alteration:

Age of mineralization:

Probably Early Cretaceous or younger based on the age of the surrounding diorite (MacKevett and others, 1974; Still and others, 1991).

Deposit model:

Probably a replacement deposit (Cox and Singer, 1986: model 19a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
19a

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:
MacKevett and others, 1974; Still and others, 1984; Still and others, 1987; Gilbert and Redman, 1989; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (near Tsirku Glacier)

Site type: Occurrence

ARDF no.: SK056

Latitude: 59.32 **Quadrangle:** SK B-4

Longitude: 136.45

Location description and accuracy:

This occurrence is located in the headwaters of the Tsirku River, 0.7 miles east of the Alaska-Canada border and 0.6 miles north of the Tsirku Glacier at an elevation of 2,500 feet. It is in the NW1/4, section 35, T. 29 S., R. 53 E. of the Copper River Meridian. It is shown as number 156 of Still and others (1984) which is at the approximate center of an area of anomalously high samples that includes map numbers 149 to 168.

Commodities:

Main: Ag, Au, Cu, Pb, Zn

Other: Ba, Co

Ore minerals: Chalcopyrite, galena(?), pyrite, pyrrhotite, sphalerite

Gangue minerals: Calcite, quartz

Geologic description:

According to Still and others (1984): 'Float and bedrock samples contain up to 6.2% zinc, 2.33% copper, 1.18% lead, 450 ppm cobalt, 49.84 ppm silver, 0.30 ppm gold, 1.13% barium, 200 ppm tin, 400 ppm arsenic, 300 ppm nickel, and 900 ppm bismuth. The samples include: 'pyrrhotite bearing quartz vein in slate', 'quartz boulder with 0.1 foot pyrrhotite band', 'massive pyrrhotite boulder with sparse quartz', 'altered volcanic boulder with massive sphalerite, chalcopyrite and galena(?)', and '70% silica, 30% sulfides - pyrrhotite, chalcopyrite and sphalerite.' Bedrock in the area is Paleozoic slate, metavolcanics. and limestone near a Cretaceous diorite, quartz diorite and granodiorite pluton (MacKevett and others, 1974).

The nature of this occurrence is unclear. It is probably either a polymetallic quartz-sulfide vein(s) or a volcanogenic, massive sulfide. If it is a vein(s), then it is probably Cretaceous based on the age of nearby intrusives (MacKevett and others, 1974). If it is a volcanogenic massive sulfide occurrence, then it is probably Late Triassic like the Windy Craggy and Greens Creek massive sulfide deposits (Still, 1984 [OF 118-84]; Newberry and others, 1997).

Alteration:

Altered volcanics are mentioned but not described (Still and others, 1984).

Age of mineralization:

If it is a quartz-sulfide vein, it is probably Cretaceous, based on the age of nearby intrusives (MacKevett and others, 1974). If it is a volcanogenic massive sulfide, it is probably Late Triassic like the Windy Craggy and Greens Creek massive-sulfide deposits nearby (Still, 1984 (OFR 118-84); Newberry and others, 1997)

Deposit model:

Unknown, but probably either a polymetallic quartz-sulfide vein or a Besshi- or Kuroko-type volcanogenic massive-sulfide occurrence (Cox and Singer, 1986; models 22c, 24b, 28a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

22c?, 24b?, 28a?

Production Status: No

Site Status: Probably inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:

MacKevett and others, 1974; Berg, 1984; Still, 1984 (OF 118-84); Still and others, 1984; Newberry and others, 1997.

Primary reference: Still and others, 1984 (OF 118-84)

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Boundary; Boundary Glacier

Site type: Prospect

ARDF no.: SK057

Latitude: 59.35 **Quadrangle:** SK B-4

Longitude: 136.47

Location description and accuracy:

This prospect is on and immediately to the east of the Alaska-Canada border, 1.75 miles south of Mt. Henry Clay at 5,700 to 6,000 feet in elevation. It is shown as numbers 116 to 121 by Still and others (1984); numbers 247 and 248 of Still and others (1987); and site P by Gilbert and Redman (1989).

Commodities:

Main: Barite, Cu

Other: As, Co, Zn

Ore minerals: Pyrite, pyrrhotite

Gangue minerals: Calcite, quartz, sericite

Geologic description:

Still and others (1991) describe this prospect as: 'Narrow bands of iron-stained metasedimentary rocks and altered metabasalt that crop through glacial ice.' 'Float and bedrock samples of sedimentary and volcanic rocks contain up to 0.034 ppm gold, 1.214 ppm silver, 280 ppm zinc, 1,390 ppm copper, 390 ppm cobalt, 400 ppm arsenic, and 200 ppm nickel.' 'A barite rich band hosted in white phyllite contained 47% barium.'

Rubicon Minerals (1998) in an unpublished Executive Summary, cites work by Kennecott Alaska Exploration that describes Boundary as: '...quartz-sericite-pyrite schist and felsite with chalcopyrite.' Rubicon also cites Kennecott samples with maximum values of 6.5% copper, 16 ppm lead, 3,610 ppm zinc, 12 ppm silver, and 1.980 ppm gold. Sample descriptions from Still and others (1984) mention phyllite, white phyllite, sericite schist, greenstone and quartzite. These rock types are similar to those at baritic massive sulfide prospects like the Main Zone/Palmer (SK066) and RW Zone (SK067) deposits, and Rubicon Minerals (1998) considers Boundary to be a volcanogenic massive-sulfide system. The phyllitic rocks may reflect a felsic volcanic or altered mafic volcanic protolith. If Boundary is a volcanogenic massive sulfide system correlative with the Windy Craggy deposit in Canada and the Greens Creek deposit on Admiralty Island, then this prospect and others like it in the Mt. Henry Clay area are probably Late Triassic (Still, 1984 [OF 118-84]; Newberry and others, 1997).

Alteration:
Quartz-sericite (?).

Age of mineralization:
If Boundary is a volcanogenic massive-sulfide deposit correlative with the Windy Craggy deposit in Canada and the Greens Creek deposit on Admiralty Island, then this prospect and others like it in the Mt. Henry Clay area are probably Late Triassic (Still, 1984 [OF 118-84]; Newberry and others, 1997).

Deposit model:
Besshi- or Kuroko-type massive sulfide (?) (Cox and Singer, 1986; models 28a? or 24b?).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
28a? or 24b?

Production Status: None

Site Status: Active

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:
Still, 1984 (OF 118-84); Still and others, 1984; Still and others, 1987; Gilbert and Redman, 1989; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991; Newberry and others, 1997; Rubicon Minerals, 1998.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Nunatak; Saksaia Glacier

Site type: Prospect

ARDF no.: SK058

Latitude: 59.37 **Quadrangle:** SK B-4

Longitude: 136.41

Location description and accuracy:

The location is in the approximate center of the prospect which extends for about 1,500 feet between 3,800 and 4,500 feet in elevation on a nunatak within the Saksaia Glacier. It is near the center of section 12, T. 29 S., R. 53 E. of the Copper River Meridian. It is shown as location 11 by Cobb (1972 [MF 424]) and in Figure 7 in Still (1984 [OF 118-84]).

Commodities:

Main: Ag, Au, Ba, Cu, Pb, Zn

Other:

Ore minerals: Barite, chalcopyrite, galena, gold, pyrite, sphalerite, sulfosalts (?)

Gangue minerals:

Geologic description:

According to Still (1984 [OF 21-84]), the prospect consists of an iron-stained zone of quartz-sericite schist and altered volcanic rocks exposed for 1,500 feet across the face of a nunatak. Barite lenses and beds containing interbedded and remobilized sulfides occur within this zone. The mineral assemblage and field relationships are similar to the Main Zone/Palmer prospect (SK066) (MacKevett and others, 1974). Rubblecrop indicates that some of the baritic beds may be up to 20 feet thick. Samples of the baritic rock contain up to 2.58 ppm gold, 335.3 ppm silver, 2.38% zinc, 1,820 ppm copper, 2.0% lead, 48% barite, and 1,000 ppm arsenic. A 200-pound sample collected by Merrill Palmer was divided into 13 separate samples and analyzed by Newmont Gold Company. The samples averaged 11.84 ounces of silver per ton and 0.092 ounces of gold per ton. This prospect lies along a northwesterly mineral trend that extends through the Cap prospect (SK060) to the Mount Henry Clay prospect (SK068). Rubicon Minerals considers these prospects to all occur at the same mineralized stratigraphic horizon and attributes their distribution to a northwest-trending, shallowly plunging antiform that brings the massive-sulfide horizon close to the surface (Rubicon Minerals, 1998). The Nunatak prospect and other similar prospects in the Mt. Henry Clay area are probably correlative with the Windy Craggy deposit in Canada and the Greens Creek deposit on Admiralty Island and are therefore Late

Triassic (Still, 1984 [OF 118-84]; Newberry and others, 1997).

Alteration:
Phyllic.

Age of mineralization:
The Nunatak prospect and other similar prospects in the Mt. Henry Clay area are probably correlative with the Windy Craggy deposit in Canada and the Greens Creek deposit on Admiralty Island and are, therefore Late Triassic (Still, 1984 (OFR 118-84); Newberry and others, 1997).

Deposit model:
Besshi- or Kuroko-type volcanogenic massive sulfide deposit (Cox and Singer, 1986; models 24a or 24b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
28a or 24b

Production Status: None

Site Status: Active

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:
Winkler and MacKevett, 1970; MacKevett, 1971; Cobb, 1972 (MF 424); MacKevett and others, 1974; Cobb, 1978 (OF 78-316); Berg, 1984; Still, 1984 (OF 118-84); Gilbert and Redman, 1989; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991; Newberry and others, 1997; Rubicon Minerals, 1998.

Primary reference: Still, 1984 (OF 118-84)

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Shannon

Site type: Prospect

ARDF no.: SK059

Latitude: 59.37 **Quadrangle:** SK B-4

Longitude: 136.35

Location description and accuracy:

This occurrence is at an elevation of 4,500 feet on the north slopes of Flower Mountain, approximately 1.3 miles, N39E from the summit. It is in the NE1/4, section 8, T. 29 S., R. 54 E. of the Copper River Meridian. It is shown as location M by Gilbert and Redman (1989) and number 16 on sheet 1 by Still and others (1991).

Commodities:

Main: Ag, Cu

Other: Au, Co, Zn

Ore minerals:

Gangue minerals:

Geologic description:

According to Still and others (1991), the Shannon prospect is a small iron-stained lens of grossularite garnet-sulfide-magnetite skarn discovered in 1987 by Merrill Palmer . Selected high-grade samples from this lens contained up to 0.068 ppm gold, 1.3 ppm silver, 600 ppm zinc, 3,400 ppm copper, and 245 ppm cobalt (Gilbert and others, 1991). The host rocks for this prospect are Paleozoic to early Mesozoic mafic volcanics and sediments near an apophysis of Cretaceous quartz diorite to granodiorite that extends to the northeast from Flower Mountain (MacKevett and others, 1974). The skarn and mineralization are probably related to this intrusive body, thus are probably Cretaceous.

Alteration:

Skarn.

Age of mineralization:

Probably Cretaceous based on the age of the nearby intrusive rocks (MacKevett and others, 1974).

Deposit model:

Copper skarn (Cox and Singer, 1986; model 18b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
18b

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:
MacKevett and others, 1974; Gilbert and Redman, 1989; Gilbert and others, 1991; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Cap

Site type: Prospect

ARDF no.: SK060

Latitude: 59.38 **Quadrangle:** SK B-4

Longitude: 136.42

Location description and accuracy:

This prospect is at the northern edge of Saksaia Glacier at an elevation of about 3,800 feet and approximately 2.1 miles due east of Mt. Henry Clay. It is shown in Figure 7 of Still (1984 [OF 118-84]).

Commodities:

Main: Ag, Au, Ba, Pb, Zn

Other: Sb

Ore minerals: Barite, galena, pyrite, sphalerite, tetrahedrite

Gangue minerals:

Geologic description:

This prospect consists of barite-rich sulfide lenses up to 8 feet thick in a 50-foot-thick, 220-foot-long, iron-stained zone capped by volcanics that outcrop above the Saksaia glacier. The full extent of the prospect is hidden by glacier and cover. Pyrite, sphalerite, galena and tetrahedrite are found in the barite lenses. Samples contained up to 50% barium, 1.1% zinc, 0.33% lead, 277.7 ppm silver, 1.371 ppm gold, and 100 ppm cobalt. (Still, 1984 [OF 118-84], and Still and others, 1991). The mineralization is near a cupola of Cretaceous quartz diorite. It is mineralogically similar to the other barite-rich deposits lodes in the area such as the Main Zone/Palmer (SK066) and Nunatak (SK058) prospects (MacKevett and others, 1974).

Rubicon Minerals (1998) cites the results of work by Newmont Gold Company that includes a 43-foot channel sample that contained 247.6 ppm silver, 0.263 ppm gold, 2,753 ppm zinc, 1,803 ppm lead, and 174 ppm copper as well as a drill hole with a 76.3-foot-thick intercept that averaged 3.7 ounces of silver per ton. This prospect lies along a northwesterly mineral trend that includes the Nunatak (SK058), Cap, and Mt. Henry Clay (SK068) prospects. Rubicon Minerals considers these prospects to all occur at the same mineralized stratigraphic horizon and attributes their distribution to a northwest-trending, shallowly plunging antiform that brings the massive-sulfide horizon close to the surface (Rubicon Minerals, 1998). The Cap prospect and other similar prospects in the Mt. Henry Clay area are probably correlative with the Windy Craggy deposit in Canada and

the Greens Creek deposit on Admiralty Island and are therefore Late Triassic (Still, 1984 [OF 118-84]; Newberry and others, 1997).

Alteration:

Age of mineralization:

The Cap prospect and other similar prospects in the Mt. Henry Clay area are probably correlative with the Windy Craggy deposit in Canada and the Greens Creek deposit on Admiralty Island and are therefore Late Triassic (Still, 1984 [OF 118-84]; Newberry and others, 1997).

Deposit model:

Probably a Kuroko- or Besshi-type volcanogenic massive sulfide (Cox and Singer, 1986; models 28a or 24b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

28a or 24b

Production Status: None

Site Status: Active

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:

MacKevett and others, 1974; Berg, 1984; Still, 1984 (OF 118-84); Gilbert and Redman, 1989; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991; Newberry and others, 1997; Rubicon Minerals, 1998.

Primary reference: Still, 1984 (OF 118-84)

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Hanging Glacier

Site type: Prospect

ARDF no.: SK061

Latitude: 59.39 **Quadrangle:** SK B-4

Longitude: 136.42

Location description and accuracy:

This prospect occurs between an elevation of 5,100 and 5,700 feet above a small unnamed hanging glacier that is about 1/2 mile northwest of the Saksaia Glacier. The approximate center of the prospect is near the west-central edge of section 1, T. 29 S., R. 53 E. of the Copper River Meridian. It is shown in figure 7 of Still (1984 [OF 118-84]).

Commodities:

Main: Ag, Au, barite, Cu, Pb, Zn

Other:

Ore minerals: Barite, chalcopyrite, galena, gold, pyrite, sphalerite

Gangue minerals:

Geologic description:

According to Still (1984 [OF 118-84]) and Still and others (1991), this prospect is an iron-stained zone of metasediments and hydrothermally altered metabasalt several hundred feet thick and about 2,000 feet long that strikes northeast and dips steeply north. The mineralization consists of barite lenses up to several feet thick and quartz-calcite ladder veins up to 0.5 feet thick. Both lenses and veins contain barite, pyrite, sphalerite, galena, and minor chalcopyrite. Samples from the lenses and veins contain up to 54% Ba, 14.1% zinc, 0.035% copper, 0.37% lead, 19.36 ppm silver, and 0.244 ppm gold. MacKevett and others (1974) note that the ladder veins occur within a 4- to 8-foot-thick altered dike that cuts the metavolcanic rocks. The ladder veins are as much as 6 inches thick and contain quartz, calcite, sphalerite, galena and minor chalcopyrite. They describe the barite lenses as a baritic footwall vein that contains fairly abundant galena and minor pyrite, sphalerite, and chalcopyrite.

Sampling by Rubicon Minerals (1998) indicated values of up to 18.25% zinc, 0.11% copper, 0.05% lead, 0.49 ppm gold, and 36.2 ppm silver. Rubicon considers the Hanging Glacier prospect to be a volcanogenic massive-sulfide system that may be stratigraphically higher relative to the Cap (SK060) and Nunatak (SK058) prospects or, alternatively, a structural repetition of the Cap-Nunatak horizon (Rubicon Minerals, 1998). The Hanging Glacier prospect and other similar prospects in the Mt. Henry Clay area are probably

correlative with the Windy Craggy deposit in Canada and the Greens Creek deposit on Admiralty Island and are therefore Late Triassic (Still, 1984 [OF 118-84]; Newberry and others, 1997).

Alteration:

Age of mineralization:

The Hanging Glacier prospect and other similar prospects in the Mt. Henry Clay area are probably correlative with the Windy Craggy deposit in Canada and the Greens Creek deposit on Admiralty Island and are therefore Late Triassic (Still, 1984 [OFR 118-84]; Newberry and others, 1997).

Deposit model:

Probably a volcanogenic massive-sulfide deposit with associated veining, some of which may be due to remobilization during deformation and metamorphism (Cox and Singer, 1986; models 28a or 24b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

28a or 24b

Production Status: No

Site Status: Active

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:

MacKevett and others, 1974; Berg, 1984; Still, 1984 (OF 118-84); Gilbert and Redman, 1989; Still and others, 1991; Newberry and others, 1997; Rubicon Minerals, 1998.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Christmas Creek

Site type: Mine

ARDF no.: SK062

Latitude: 59.40 **Quadrangle:** SK B-4

Longitude: 136.34

Location description and accuracy:

Christmas Creek is an informally named, north flowing creek that intersects Glacier Creek at an elevation of between 1,100 feet and 1,200 feet. The location is shown near the mouth of the creek in the SE1/4, section 35, T. 28 S., R. 53 E. of the Copper River Meridian. Mine workings extend to head of Christmas Creek, 1.6 miles to the south. It is shown as locations 15 to 18 in figure 7 of Hoekzema and others (1986).

Commodities:

Main: Au

Other: W

Ore minerals: Gold, scheelite

Gangue minerals:

Geologic description:

According to Hoekzema and others (1978), the lower portions of Christmas Creek were placer mined sporadically in the early 1900's and the late 1970's but the total production has only been about 200 ounces of gold. The creek is a small, steep, north-flowing tributary to Glacier Creek and has a gradient of 1,000 feet per mile. Four reconnaissance samples of alluvial gravels from old mining cuts near the junction with Glacier Creek indicated a relatively equal distribution of gold through 8 feet of gravel that averaged 0.0065 ounces of gold per cubic yard. The placer gold is rough and nuggety and panned-concentrate samples also contained garnet, magnetite, and zircon. Fine-grained, well-worn 'glacial' gold was panned from the lower 6 feet of of glacial till exposed in Christmas Creek and, apparently, contrasts with the placer gold in the alluvial gravels. Christmas Creek is the only locality in the Porcupine area where gold has been recognized in glacial till.

Placer gold in the Porcupine area is generally considered to be derived from a northwest-trending zone of auriferous quartz-sulfide veins in metasediments in the Skagway B-4 quadrangle (Wright, 1904 [B 225 and B 236]; Eakin, 1918 and 1919; MacKevett and others, 1974). However, Hoekzema and others (1986) speculate that the placer gold in Christmas Creek may have been derived from stratiform volcanogenic mineral deposits in

metavolcanic rocks.

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au (Cox and Singer; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
The lower portion of Christmas Creek was placer mined with a small hydraulic plant in 1910 and this property was patented in 1916. A small heavy equipment operation worked the area in the late 1970's with meager results (Hoekzema and others, 1986).

Production notes:
Total production is estimated at 200 ounces of gold (Hoekzema and others, 1986).

Reserves:
According to Hoekzema and others (1986), the identified resources are largely restricted to the lower 0.5 miles of the creek. The lowermost section of the creek in the vicinity of previous workings is estimated to contain 12,000 cubic yards of gravel that contain 0.0065 ounces of gold per cubic yard. An additional resource of up to 30,000 cubic yards is estimated to occur farther upstream.

Additional comments:

References:
Eakin, 1919; Cobb, 1978 (OF 78-316); Cobb, 1981 (OF 81-82A); Still and others, 1984; Hoekzema and others, 1986; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Hoekzema and others, 1986

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Red Creek; Wolf Den

Site type: Prospect

ARDF no.: SK063

Latitude: 59.40 **Quadrangle:** SK B-4

Longitude: 136.32

Location description and accuracy:

The Wolf Den prospect is located on the north slopes of Flower Mountain at an elevation of approximately 2,500 feet; it is 3.9 miles, S22E from Pleasant Camp on the Alaska-British Columbia border. It is in the SE1/4, section 36, T. 28 S., R. 53 E. of the Copper River Meridian. It's location is taken from Still and others (1991). Rubicon Minerals (1998) refers to a Red Creek prospect that is reported to be 3 miles east of the Main Zone/ Palmer prospect (SK066), which places it very close to the Wolf Den prospect. The two are combined here, as they may be the same occurrence despite somewhat different descriptions.

Commodities:

Main: Au

Other: Hg, Pb, Zn

Ore minerals: Arsenopyrite, galena, pyrite, sphalerite

Gangue minerals: Quartz

Geologic description:

Two different sources, Still and others (1991) and Rubicon Minerals (1998) provide similar locations for prospects with differing names and descriptions. Still and others (1991) describe the Wolf Den prospect as quartz-pyrite-arsenopyrite-sphalerite veins in a tan dike less than 10 feet thick. The veins are up to 0.3 feet thick, extend up to 5 feet in length, and are confined to the dike. Samples from the veins contained up to 11.4 ppm gold and 3,500 ppm zinc. A 5-foot-long chip sample of slate with pyrite bands collected upstream form the dike contained 0.103 ppm gold and 225 ppm zinc.

Rubicon Minerals (1998) refers to an unpublished Cominco Alaska report that describes the Red Creek prospect as a, '...rhyolite fragmental with a small two-foot-thick exposure of a massive pyrite breccia in a creek bed.' They also report the discovery of barite and semi-massive pyrite at the site in 1998 and cite samples with 2,080 ppm zinc and 12.83 ppm mercury. Rubicon Minerals (1998) interprets the Red Creek prospect to be the most southeasterly known prospect of a mineral trend that extends to the northwest through the Main Zone/Palmer (SK066), Little Jarvis (SK069), and an unnamed (SK070) prospect.

The descriptions for this prospect suggest both a volcanogenic massive-sulfide deposit of probable Late Triassic age (Still, 1984 [OF 118-84]; Newberry and others, 1997), and Cretaceous or younger, auriferous quartz-sulfide veins within a northwest trending zone of quartz-sulfide veining in metasediments (Wright, 1904 [B 225 and B 236]; Eakin,1918 and 1919; and MacKevett and others, 1974).

Alteration:

Based on its similarity to the Golden Eagle prospect (SK047) and other occurrences in the area, the tan dike is probably a mafic dike that has been altered to a silica-carbonate rock (Still and others, 1991).

Age of mineralization:

The Wolf Den prospect, if different from Red Creek prospect, may be related to Cretaceous plutonism. The description of Red Creek suggests it is a volcanogenic massive-sulfide deposit correlative with the Late Triassic Windy Craggy and Greens Creek deposits (Still, 1984 [OF 118-84]; Newberry and others, 1997).

Deposit model:

Polymetallic quartz-sulfide vein and/or a volcanogenic massive sulfide. There may be two different types of deposits (Cox and Singer, 1986; models 22c,? 24b?, 28a?.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

22c?, 24b?, 28a?

Production Status: None

Site Status: Active?

Workings/exploration:

The Red Creek prospect was discovered by Cominco Alaska in 1990. Additional prospecting by Rubicon Minerals and its associates in 1998 discovered barite and semi-massive pyrite breccia (Rubicon Minerals, 1998).

Production notes:

Reserves:

Additional comments:

References:

Wright, 1904 (B 225); Wright, 1904 (B 236); Eakin, 1918; Eakin, 1919; MacKevett and others, 1974; Still, 1984 (OF 118-84); Gilbert and Redman, 1989; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991; Newberry and others, 1997; Rubicon Minerals, 1998.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (on Glacier Creek)

Site type: Prospect

ARDF no.: SK064

Latitude: 59.41 **Quadrangle:** SK B-4

Longitude: 136.33

Location description and accuracy:
This prospect is on the east bank of Glacier Creek at an elevation of 1,000 feet. It is in the NW1/4, section 36, T. 28 S., R. 53 E. of the Copper River Meridian. It is shown as number 8 on sheet 1 by Still and others (1991).

Commodities:

Main: Ag, Au, Zn

Other: Cu, Pb

Ore minerals: Pyrite

Gangue minerals:

Geologic description:
Still and others (1991) describe this prospect as a 10-foot-long adit driven along a pyrite-bearing shear zone in limestone. Samples from the adit and its vicinity contained up to 0.59 ppm gold, 3 ppm silver, 1,100 ppm zinc, 550 ppm copper, and 140 ppm lead. The limestone unit is Paleozoic (MacKevett and others, 1974) possibly, Late Pennsylvanian or Early Permian (Eakin, 1919).

Alteration:

Age of mineralization:
Probably Late Paleozoic or younger based on the age of the limestone (MacKevett and others, 1974; Eakin, 1919).

Deposit model:
Mineralized shear zone in limestone.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Probably inactive

Workings/exploration:

A 10-foot-long adit was driven on a pyrite-bearing shear zone in limestone (Still and others, 1991).

Production notes:

Reserves:

Additional comments:

References:

MacKevett and others, 1974; Berg, 1984; Gilbert and Redman, 1989; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Glacier Creek

Site type: Mine

ARDF no.: SK065

Latitude: 59.42 **Quadrangle:** SK B-4

Longitude: 136.30

Location description and accuracy:
The workings of this placer gold mine include at least the lower mile of Glacier Creek above its junction with the Klehini River (Eakin, 1919). Glacier Creek is a northeast flowing tributary of the Klehini River that is located approximately 2 miles west of Porcupine Creek. It is shown as location 25 by Cobb (1972 [MF 424]).

Commodities:

Main: Au?

Other:

Ore minerals:

Gangue minerals:

Geologic description:
According to Hoekzema and others (1986), there was prospecting and placer mining on the lower parts of Glacier Creek from 1899 to 1918. As much as a quarter of million dollars was spent developing a placer mine that was probably based on salted samples. No significant production was reported. Glacier Creek is less steep than most of the creeks in the area. Reconnaissance sampling by the U.S. Bureau of Mines found no significant recoverable gold values. Pan concentrate samples contained up to 70% sulfides, mostly pyrite, 10% magnetite, and minor garnet and zircon.

Alteration:

Age of mineralization:
Probably no placer in Quaternary gravels.

Deposit model:
Probably no placer but if so a placer Au deposit (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:

Claims were staked on Glacier Creek in 1899 and 1900 but were not developed at that time due to the depth to the pay gravels and the low ore grades (Hoekzema and others, 1986). According to Eakins (1919) the creek was drilled at close intervals for over a mile upstream from the margin of the Klehini River valley and preparations were made to work a 4,200 long section of the lower valley. Dams, flumes, pipelines, giants and hydraulic elevator were installed by midsummer 1915 but operation was prevented by floods that year. There was little production in 1916 due to flooding in late June, 1916 . Hoekzema and others (1986) report that operations continued into 1918 but recovery was poor and the operation closed down after working a quarter mile of stream channel. They also cite a report by Beatty (1937) that indicates that a quarter of million dollars were spent on development that was based on drilling results which later proved to have been salted.

Production notes:

Probably little or no production.

Reserves:

Additional comments:

References:

Eakin, 1919; Beatty, 1937; Cobb, 1972 (MF 424); Berg, 1984; Hoekzema and others, 1986; Gilbert and Redman, 1989; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Hoekzema and others, 1986

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Glacier Creek; Main Zone; Palmer

Site type: Prospect

ARDF no.: SK066

Latitude: 59.39 **Quadrangle:** SK B-4

Longitude: 136.39

Location description and accuracy:

This prospect occurs within a prominent yellow-orange-red color anomaly on the north side of Glacier Creek between elevations of about 3,500 feet and 4,500 feet. It outcrops over a length of about 1/2 mile and its approximate center is given. It is in the NW1/4, section 6, T. 29 S., R. 54 E. of the Copper River Meridian. It is shown as location 12 by Cobb (1972 [MF 424]) and in figure 7 of Still (1984 [OF 118-84]).

Commodities:

Main: Ag, Au, Ba, Cu, Pb, Zn

Other:

Ore minerals: Barite, chalcopyrite, galena, gold, magnetite, pyrite, sphalerite, sulfosalts (?)

Gangue minerals: Chlorite, quartz, sericite

Geologic description:

According to MacKevett and others (1974), the prospect is a barite-rich lode that occurs within a large altered, fault zone that cuts greenschist and subordinate quartzite. The fault zone is up to several hundred feet wide and dips steeply to the north. Near its easternmost exposure, the fault zone strikes about N60W but at its western end it strikes about N85E. The main barite-rich lode outcrops discontinuously over a distance of about 1/2 mile and a vertical extent of more than 1,000 feet. The lode is variably sheared and consists mainly of barite with sparsely disseminated sulfides and, locally narrow, sulfide-rich bands. The sulfides include pyrite, galena, sphalerite, and chalcopyrite. Secondary minerals include gypsum, azurite, chrysocolla, limonite, and rare anglesite, cerussite, and smithsonite. Minor amounts of sericite, chlorite and quartz gangue occur within the barite lode (MacKevett and others, 1974).

The deposit consists of two lenses. The western lens averages 15 feet thick over a length of 250 feet and the eastern lens averages 70 feet thick over a length of 800 feet. Samples contain up to 45% barite, 7.8% zinc, 1.8% copper, 0.52% lead, 147.43 ppm silver, and 0.607 ppm gold. Based on an average of 15 composite samples, the mineralization is estimated to average 60% barite, 1.73% zinc, and 60 ppm silver (Still, 1984 [OF 118-84]); Still and others, 1991). The greenschist that hosts the mineralization and its

quartz-sericite-pyrite alteration envelope is a mafic volcanic that locally contains well preserved pillows.

More recent interpretations (since MacKevett and others, 1974) regard the prospect as a stratiform, volcanogenic, massive sulfide (Still, 1984 [OF 118-84]; Still and others, 1991; Newberry and others, 1997). The quartz-sericite-pyrite alteration surrounding the mineralization is itself surrounded by a foliated zone of chloritic alteration. The sericitization in the alteration envelope and the mineralization itself are less competent units that were probably preferentially sheared and faulted relative to the surrounding metavolcanics. Drilling by various different companies, including Anaconda in 1979 and Rubicon Minerals in 1998, intersected extensive alteration and thin or weakly mineralized intervals that did not approach ore-gradethickness. (T. Crafford, personal observation; Rubicon Minerals, 1998).

Rubicon Minerals (1998) interprets the Main Zone to be part of a nearly 5-mile-long, northwesterly striking mineral trend that extends from the Red Creek prospect (SK063) at the southeast end through this prospect to the unnamed occurrences (SK070) in the steep slopes immediately south of the Jarvis Glacier. They believe this trend to be at or near the apex of a shallowly plunging, northwest-trending antiform that is subparallel to another, similar trend that extends through the Nunatak (SK058), Cap (SK060), and Mount Henry Clay (SK068) prospects.

The Main Zone/Palmer and other similar prospects in the Mt. Henry Clay area are probably correlative with the Windy Craggy deposit in Canada and the Greens Creek deposit on Admiralty Island and are therefore Late Triassic (Still, 1984 [OF 118-84]; Newberry and others, 1997).

Alteration:

Quartz-sericite-pyrite (phyllic) alteration and chloritic alteration developed within mafic metavolcanics.

Age of mineralization:

Probably Late Triassic based on inferred relations to the Greens Creek Mine on Admiralty Island and the Windy Craggy deposit (Still, 1984 [OF 118-84]; Newberry and others, 1991).

Deposit model:

Probably a Besshi- or Kuroko-type volcanogenic massive sulfide (Cox and Singer, 1986; models 28a or 24b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

28a or 24b

Production Status: None

Site Status: Active

Workings/exploration:

The deposit was discovered in 1969 and 1971 by Merril Palmer and associates

(MacKevett and others, 1974). A 3,000-pound bulk sample collected by ALYU Mining assayed 76.4% barite, 3.6% zinc, 0.98% copper, 0.12% lead, and 92 ppm silver (Still, 1984 [OF 118-84]). This prospect has been explored by numerous companies, including the Anaconda Minerals Company, Kennecott Alaska Exploration, Newmont Gold Company, Granges Inc., Cominco Alaska, Inc., Teck Corporation, and Rubicon Minerals-Atna Resources Ltd. Exploration expenditures in the area, including Mt. Henry Clay and other nearby volcanogenic massive sulfide occurrences through 1998 are estimated to be approximately US$2.2 million.

Production notes:

Reserves:

A resource of 750,000 tons of ore was estimated based on projecting the barite lenses down dip for 1/2 of their strike length (Still, 1984 [OF 118-84]).

Additional comments:

References:

MacKevett, 1971; Cobb, 1972 (MF 424); MacKevett and others, 1974; Hawley, 1976; Cobb, 1978 (OF 78-316); Redman, 1983; Berg, 1984; Still, 1984 (OF 118-84); Nokleberg and others, 1987; Forbes and others, 1989; Gilbert and Redman, 1989; Still and others, 1991; Newberry and others, 1997; Rubicon Minerals, 1998.

Primary reference: Still, 1984 (OF 118-84)

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): RW Zone

Site type: Prospect

ARDF no.: SK067

Latitude: 59.40 **Quadrangle:** SK B-4

Longitude: 136.40

Location description and accuracy:

The prospect is approximately 3.0 miles, N58E from the summit of Mt. Henry Clay in the SE1/4, section 33, T. 2 S., R. 53 E. of the Copper River Meridian. Its location is taken from 1999 press releases of Rubicon Minerals (http://www.rubiconminerals.com) where the RW Zone is described as being located 1,600 feet from the Main Zone (SK066) between the Little Jarvis and Main Zone (SK066) showings. Still and others (1991) use the name 'Little Jarvis' for mineral showings on both the east and west sides of the Little Jarvis Glacier and this can be confusing. From Rubicon's press releases, it appears that the 'Little Jarvis' of Still and others (1991) on the east side of the Little Jarvis Glacier is only about 600 feet from Rubicon's RW Zone. Due to their apparent proximity, they are considered here as a single prospect.

Commodities:

Main: Ag, Cu, Zn

Other: Au

Ore minerals: Barite, chalcopyrite, pyrite, sphalerite

Gangue minerals: Chlorite, quartz, sericite

Geologic description:

Exploration by Rubicon Minerals in 1998 and drilling in 1999 discovered massive sulfide mineralization at the RW Zone. The RW Zone prospect is near the center of a 5-mile-long northwester trend that extends from the unnamed occurrences (SK070) at the northwest end through this prospect (SK067) and the Main Zone/Palmer prospect (SK066) to the Red Creek prospect (SK063) at the southeast end. Rubicon interprets the trend to represent the apex of a shallowly plunging, northwest-trending antiform. Mineralization intercepted in drill holes occurs both as: 1) chalcopyrite-sphalerite massive-sulfide mineralization, and 2) chalcopyrite-bearing, stringer-zone mineralization within a zone of strong chloritic alteration. The massive-sulfide, drill-intercept thicknesses range from 7.2 feet to 15 feet and contain up to 13.48% zinc, 1.89% copper, 2.98 ounces of silver per ton, and 0.02 ounces of gold per ton. Massive-sulfide drill intercepts extend over a dip length of 420 feet. The stringer-zone mineralization is beneath the massive sulfide

horizon. One drill hole intercepted 156 feet of stringer-zone mineralization that included a 67.8-foot-thick interval with an average grade of 0.62% copper. Within the 67.8-foot-thick interval, there was a 16.2-foot interval that contained 1.50% copper. Surface samples from the nearby Little Jarvis prospect contain up to 13% zinc, 7% copper, and 7.0 ounces of silver per ton over a width of 15 feet. Rhyolites have been reported from the drill core. (Information summarized from Rubicon Minerals, 1998 and 1999).

If the RW Zone and other similar prospects in the Mt. Henry Clay area are correlative with the Windy Craggy deposit in Canada and the Greens Creek deposit on Admiralty Island, then they are Late Triassic (Still, 1984 [OF 118-84]; Newberry and others, 1997).

Alteration:

Sericitic, chloritic. The stringer zone below the massive sulfide horizon is chloritically altered.

Age of mineralization:

The RW Zone and other similar prospects in the Mt. Henry Clay area are probably correlative with the Windy Craggy deposit in Canada and the Greens Creek deposit on Admiralty Island and are therefore Late Triassic (Still , 1984 (OFR 118-84); Newberry and others, 1997).

Deposit model:

Kuroko- or Besshi-type volcanogenic massive-sulfide deposit (Cox and Singer, 1986; models 28a or 24b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

28a or 24b

Production Status: None

Site Status: Active

Workings/exploration:

At least 6 holes were drilled on the prospect in 1999 by Rubicon Minerals. This was the first drilling in the Porcupine Creek - Mount Henry Clay area to intersect ore-grade thicknesses of massive-sulfide mineralization (Rubicon Minerals, 1999).

Production notes:

Reserves:

Additional comments:

References:

MacKevett and others, 1974; Redman, 1983; Still, 1984 (OF 118-84); Still and others, 1991; Newberry and others, 1997; Rubicon Minerals, 1998; Rubicon Minerals, 1999.

Primary reference: Rubicon Minerals, 1999

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Mount Henry Clay

Site type: Prospect

ARDF no.: SK068

Latitude: 59.39 **Quadrangle:** SK B-4

Longitude: 136.46

Location description and accuracy:

This location is the approximate center of a 1/2 mile long arcuate pattern of mineralized float below a small hanging glacier. Most of the mineralized float is between about 4,200 and 4,400 feet in elevation in a narrow septum of rock and talus between glaciers; it is located about 1 mile north-northeast of Mt. Henry Clay and within 1/2 mile of the Canada-United States border. It is shown as location 21 in figure 6 by Still (1984 [OF 118-84]).

Commodities:

Main: Ag, Au, Ba, Cu, Pb, Zn

Other:

Ore minerals: Barite, bornite, chalcopyrite, galena (argentiferous), gold, pyrite, sphalerite

Gangue minerals: Calcite, chlorite, epidote, quartz

Geologic description:

According to Still (1984 [OF 118-84]), the Mt. Henry Clay prospect is located within the Glacier Creek volcanic-sedimentary sequence that hosts all of the Glacier Creek volcanogenic massive-sulfide occurrences. The sequence includes basalt, which locally display good pillow structures, andesitic flows and tuffs, and minor sedimentary rocks. The andesitic flows and tuffs in the vicinity of Mt. Henry Clay are mostly altered to chloritic phyllites. Exposed mineralization consists of sphalerite-barite-pyrite-chalcopyrite boulders up to 6 feet in diameter that are found along a sliver of rock that extends for a distance of 1/2 mile beneath the toe of a small triangular-shaped hanging glacier. Bedrock exposures of mineralization were not found and the source of the mineralized boulders is probably beneath the glacier. Assays of the mineralized float are variable; the highest grade samples contain 20 to 44% zinc, 5% barium, and several percent copper. Ore-grade mineralization was not found in place, but elevated levels of zinc, copper, barium, lead, silver, and gold were found in altered andesites in the area.

Diamond drilling by Kennecott Exploration intersected felsic schists that contained barite-sphalerite mineralization underlain by pyrite-chalcopyrite stringer zones in chloritized basalt. Their drill core assays included intervals from 20 to 161 feet thick that contained up to 0.70% zinc and 0.44% copper. Drilling by Stryker Resources and Freeport Re-

sources on the Canadian side of the border returned similar values. (Still and others, 1991; Rosenkrans and Jones, 1985).

Eleven drill holes, 7 by Kennecott Exploration and 4 by Granges, Inc. totaling 8,719 feet, identified two mineralized horizons but did not intercept high grade mineralization comparable to the surface boulders. Rubicon Minerals interprets the Mount Henry Clay prospect to to be on a mineral trend along or near the apex of a shallowly plunging, northwest-trending antiform that extends to the southeast through the Cap (SK060) and Nunatak (SK058) prospects. (Rubicon Minerals, 1998). The Mt. Henry Clay prospect and other similar prospects in the Mt. Henry Clay area are probably correlative with the Windy Craggy deposit in Canada and the Greens Creek deposit on Admiralty Island and are therefore Late Triassic (Still, 1984 [OF 118-84]); Newberry and others, 1997).

Alteration:

Chloritic.

Age of mineralization:

The Mt. Henry Clay prospect and other similar prospects in the Mt. Henry Clay area are probably correlative with the Windy Craggy deposit in Canada and the Greens Creek deposit on Admiralty Island and are therefore Late Triassic (Still, 1984 [OF 118-84]; Newberry and others, 1997).

Deposit model:

Probably a Besshi- or Kuroko-type volcanogenic massive sulfide (Cox and Singer, 1986; models 28a or 24b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

28a or 24b

Production Status: No

Site Status: Active

Workings/exploration:

Stryker Resources drilled 5 holes totaling 2,787 feet in length on extensions of this occurrence on the Canadian side of the border in 1985 (Still and others, 1991; Rosenkrans and Jones, 1985). Eleven drill holes, 7 by Kennecott Alaska Exploration and 4 by Granges, Inc. totaling 8,719 feet identified two mineralized horizons but did not intercept high grade mineralization comparable to boulders found at the surface (Rubicon Minerals, 1998).

Production notes:

Reserves:

Additional comments:

References:

Redman, 1983; Still, 1984 (OF 118-84); Rosenkrans and Jones, 1985; Forbes and others, 1989; Gilbert and Redman, 1989; Still, 1991 (BOM, v. 2, sec. A); Newberry and others, 1997; Rubicon Minerals, 1998.

Primary reference: Still, 1984 (OF 118-84)

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (on west side of Little Jarvis Glacier)

Site type: Prospect

ARDF no.: SK069

Latitude: 59.41 **Quadrangle:** SK B-4

Longitude: 136.42

Location description and accuracy:

This prospect is about 3 miles, N38E from the summit of Mt. Henry Clay at an elevation of approximately 3,500 feet. It is near the southeast corner of section 29, T. 28 S., R. 53 E. of the Copper River Meridian. Still and others (1991) informally named this the 'Little Jarvis' prospect, but also included another prospect on the east side of the Little Jarvis Glacier under the same name. This record applies only to the prospect on the west side of the Little Jarvis Glacier. The prospect on the east side of the glacier has been grouped with the RW Zone prospect (SK067).

Commodities:

Main: Ag, Au, Ba, Cu, Pb, Zn

Other:

Ore minerals: Barite, galena, pyrite, sphalerite

Gangue minerals:

Geologic description:

Still and others (1991) describe this prospect as small discontinuous sulfide bands in metasedimentary and metavolcanic rocks. Samples contained up to 0.345 ppm gold, 11.8 ppm silver, 13.6% zinc, 1,900 ppm copper, 3.8% lead, 1.44% barium, and 2,000 ppm arsenic. Rubicon Minerals (1998) interprets this prospect to occur on a northwest mineral trend along the apex of a shallowly plunging, northwest-trending antiform. This mineral trend extends from the unnamed occurrences (SK070) at the northwest end through the RW Zone prospect (SK067) and Main Zone/Palmer prospect (SK066) to the Red Creek prospect (SK063) at the southeast end. This prospect and other similar prospects in the Mt. Henry Clay area are probably correlative with the Windy Craggy deposit in Canada and the Greens Creek deposit on Admiralty Island and are therefore Late Triassic (Still and others, 1984 [OF 118-84]; Newberry and others, 1997).

Alteration:

Age of mineralization:

This prospect and other similar prospects in the Mt. Henry Clay area are probably correlative with the Windy Craggy deposit in Canada and the Greens Creek deposit on Admiralty Island and are therefore Late Triassic (Still, 1984 [OF 118-84]; Newberry and others, 1997).

Deposit model:
Probably a Besshi- or Kuroko-type volcanogenic massive sulfide (Cox and Singer, 1986; models 28a or 24b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
28a or 24b

Production Status: None

Site Status: Active?

Workings/exploration:

Production notes:

Reserves:

Additional comments:
Still and others (1991) group this prospect with another one on the east side of Little Jarvis Glacier. In this compilation, the occurrence on the east side has been grouped with the RW Zone prospect (SK067) where Rubicon Minerals made the first drill discovery of ore grade massive sulfide mineralization in the area in 1999 (Rubicon Minerals, 1999).

References:
Redman, 1983; Still and others, 1984; Still and others, 1987; Gilbert and Redman, 1989; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991; Newberry and others, 1997; Rubicon Minerals, 1998; Rubicon Minerals, 1999.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (south of Jarvis Glacier)

Site type: Occurrences

ARDF no.: SK070

Latitude: 59.42 **Quadrangle:** SK B-4

Longitude: 136.45

Location description and accuracy:

This site includes several mineralized exposures on the south side of the Jarvis Glacier in a steep walled canyon about 4 miles east-southeast from the Pleasant Camp border station on the Haines Highway. They are in the NE1/4, section 30, T. 28 S., R. 53 E. of the Copper River Meridian. The location corresponds to sample location 109 in Figure 8 of Still (1984 [OF 118-84]) and was informally termed the 'Jarvis Glacier Gulches' prospect by Still and others (1991).

Commodities:

Main: Ag, Au, Ba, Cu, Pb, Zn

Other:

Ore minerals: Barite, chalcopyrite, galena, goethite, gold, pyrite, pyrrhotite, sphalerite

Gangue minerals: Calcite, chlorite, quartz

Geologic description:

According to Still (1984 [OF 118-84]), these occurrences are located in the Little Jarvis volcanic-sedimentary sequence (Redman, 1983) that consists of northwesterly striking basalt, andesite, and metasediments that include slate and limestone. Most of the occurrences are within the 'Pzsv' unit that consists of slate, limestone and andesite. This unit is capped by andesite and pillow basalt. The Little Jarvis sequence may be the same age as the Glacier Creek sequence, which hosts the Main Zone/Palmer prospect (SK066) (Redman, 1983). Rubicon Minerals(1998) interprets this prospect to be the most northwesterly prospect along a mineral trend that extends to the southeast through the RW Zone prospect (SK067) and Main Zone/Palmer prospect (SK066) to the Red Creek prospect (SK063)

Still (1984 [OF 118-84] also cites an important mineralized exposure at an elevation of about 3,600 feet on the southwest side of the canyon shown as number 109 on figure 8. He describes this exposure as a zone of chlorite-altered metasediments and andesites containing lenses of massive and disseminated sulfide mineralization. The zone follows bedding, is up to 5 feet thick, and contains massive-sulfide lenses up to 0.5 feet across. It can be traced for about 100 feet or more. The sulfide lenses consist of pyrite, sphalerite, chal-

copyrite, and galena in calcite- and quartz-rich rock. Samples contain up to 17.8% zinc, 0.3% lead, 1.3% copper, 11.56 ppm silver, and 0.163 ppm gold (Still, 1984 [OF 118-84]; Still and others, 1991). On the northeast side of the canyon just above the floor of the canyon at an elevation of 3,200 feet, quartz-stringer zones and sulfide zones are present. Samples of the sulfide zones at this site contained up to 6.1% zinc, 0.76% copper, 110 ppm cobalt, 4.64 ppm silver, and 0.127 ppm gold (Still, 1984 [OF 118-84]; Still and others, 1991). This prospect and other similar prospects in the Mt. Henry Clay area are probably correlative with the Windy Craggy deposit in Canada and the Greens Creek deposit on Admiralty Island and are therefore Late Triassic (Still and others, 1984 [OF 118-84]; Newberry and others, 1997).

Alteration:

Chloritic.

Age of mineralization:

Probably Late Triassic based on correlation with the Greens Creek Mine on Admiralty Island and the Windy Craggy deposit in Canada (Still, 1984 [OF 118-84]); Newberry and others, 1997).

Deposit model:

Probably a Kuroko- or Besshi-type volcanogenic massive sulfide system with associated veining (Cox and Singer, 1986; models 28a or 24b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Probably 28a or 24b

Production Status: No

Site Status: Inactive

Workings/exploration:

Sulfide float found by the U. S. Bureau of Mines at the mouth of the steep north-draining canyon lead to the initial discovery of some of the occurrences here in August, 1983. Other occurrences were discovered by ALYU Mining Corporation in September, 1983.

Production notes:

Reserves:

Additional comments:

References:

Winkler and MacKevett, 1970; MacKevett and others, 1974; Redman, 1983; Still, 1984 (OF 118-84); Still and others, 1987; Gilbert and Redman, 1989; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991; Newberry and others, 1997; Rubicon Minerals, 1998.

Primary reference: Still, 1984 (OF 118-84)

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Stampede

Site type: Prospect

ARDF no.: SK071

Latitude: 59.46 **Quadrangle:** SK B-4

Longitude: 136.47

Location description and accuracy:

These quartz veins are apparently about 1/2 mile south of Mount McDonell on the Canada-United States border. Their location is approximate and they may actually be on the Canadian side of the border. This is location 38 of Berg and others (1981). Smith (1932) refers to a Stampede group of claims,'... adjacent to the international boundary north of Haines, both in Canada and in Alaska.' Eakin's (1918; 1919) mention of gold-quartz ledges at an elevation of about 4,500 feet in the mountains north of the lower end of the Jarvis Glacier apparently applies to mineral occurrences in Canada, immediately west of the International border.

Commodities:

Main: Ag, Au

Other:

Ore minerals: Gold

Gangue minerals: Quartz

Geologic description:

This prospect consists of gold quartz veins in a granitic country rock about 300 feet above its contact with limestone. The lower and apparently richest vein varies from 1 to 4 feet in width and is traceable for 2,000 feet along strike. Assays are reported to have been from a few dollars to $70 per ton in gold (up to about 3.5 ounces per ton). The best values were from the narrower portions of the vein and most samples contained a few ounces of silver per ton (Eakin, 1918; 1919). The veins must be younger that the Cretaceous quartz diorite to granodiorite which they cut (MacKevett and others, 1974).

Alteration:

Age of mineralization:

Cretaceous or younger based on the age of the quartz diorite to granodiorite that hosts the veins (MacKevett and others, 1974).

Deposit model:
Auriferous quartz vein (Cox and Singer, 1986; models 22c or 36a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
22c or 36a

Production Status: None

Site Status: Probably inactive

Workings/exploration:
The Alaska Juneau Gold Mining Company explored the claims and dropped their option in 1929 due to, 'unsatisfactory results' (Eakin, 1918).

Production notes:

Reserves:

Additional comments:
This is the northwesternmost auriferous quartz vein occurrence within the zone of lode mineralization that appears to have been the source for the gold placers in the Porcupine area that includes Porcupine Creek (SK041), McKinley Creek (SK045), Cahoon Creek (SK044), and Glacier Creek (SK065).

References:
Eakin, 1918; Eakin, 1919; Smith, 1932; MacKevett and others, 1974; Berg and others, 1981; Berg, 1984.

Primary reference: Eakin, 1918

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Clifton

Site type: Prospect

ARDF no.: SK072

Latitude: 59.53 **Quadrangle:** SK C-1

Longitude: 135.22

Location description and accuracy:

This prospect is marked by a shallow shaft about 1,000 feet northeast of Clifton. It is just east of the White Pass and Yukon Railroad track at an elevation of about 900 feet in the SW 1/4, section 16, T. 27 S., R. 60 E. of the Copper River Meridian. Clifton is an old station on the White Pass and Yukon Railroad that is essentially coincident with Bench Mark 855 ('BM 855'). Smith (1942) refers to the location of a 30-foot tunnel about 80 feet south of the shaft on the west side of the railroad track. Herbert and Race (1965), however, mention a short tunnel on the west side of the railroad track west of their map location 2 , which is plotted about 2,500 feet southwest of Clifton. This prospect is location 21 of Cobb (1972 [MF 424]).

Commodities:

Main: Mo

Other:

Ore minerals: Molybdenite

Gangue minerals: Quartz

Geologic description:

According to Herbert and Race (1965), sparse molybdenite occurs in an aplite dike at a shallow shaft northeast of Clifton. The aplite dike occurs within a quartz monzonite that contains strong horizontal sheeting, vertical joints, and generally horizontal silicified bands with very sparse molybdenite. The molybdenum mineralization may be associated with a N60E fracture zone. Five stream sediment samples collected over an interval of approximately 4,000 feet along the railway to the southwest of Clifton contained 13 to 120 ppm molybdenum. Smith (1942) summarizes the description of J.B. Mertie, Jr. who visited the site in 1917. According to Mertie, the molybdenite appears to occur in a rock that varies from alaskite to granite and contains no mafic minerals. The molybdenite is distributed in patches throughout the granitic rock and was estimated to constitute about 1% of the rock. The granite was described as being extensively sheeted horizontally and cut by prominent joint planes that strike N50W and dip 72 degrees to the southwest.

The Clifton prospect occurs within the Clifton granite of Gilbert and others (1990) who

note the presence of widespread molybdenite mineralization in the granite and attribute it to the high level of emplacement and rapid cooling of the granite. Clough (1991 [BOM, v. 2, sec C]) observed that the Clifton granite contains miarolitic cavities and that it is the youngest granite in the region. U-Pb zircon age dates for the Clifton granite of 48.8 +/- 1.0 m.y. (Gehrels and others, 1991) and 48 +/- 2 m.y. (Barker and others, 1986) establish a likely age for the Clifton prospect.

Alteration:

None is specifically referenced in the geologic descriptions in Smith (1942) but Herbert and Race (1965) suggest bleaching and possibly, silicification.

Age of mineralization:

U-Pb zircon age dates for the Clifton pluton of 48.8 +/- 1.0 m.y. (Gehrels and others, 1991) and 48 +/- 2 m.y. (Barker and others, 1986) establish a likely age for the Clifton prospect.

Deposit model:

Disseminated molybdenite in granitic rocks, possibly related to a fracture zone.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

Brooks (1918) reported a 10-foot shaft and a 25-foot adit in 1916. In 1917, the prospect was examined by J.B. Mertie, Jr. who reported a 15-foot deep shaft on east side of rail-road track about 1,000 north of Clifton. About 80 feet south of the shaft on the west side of the track, an approximately 30-foot tunnel was driven S55E along a prominent joint plane (Smith, 1942). Herbert and Race (1965) also refer to the shaft and short tunnel. They note that although scattered grains of molybdenum can be found over a large area on the well-exposed slopes in the vicinity of Clifton, there is no evidence of other under-ground workings or surface trenching.

Production notes:

Reserves:

Additional comments:

References:

Smith, 1942; Barker, 1952; Herbert and Race, 1964; Herbert and Race, 1965; Berg and Cobb, 1967; Cobb, 1972 (MF 424); Cobb, 1978 (OF 78-316); Berg, 1984; Barker and others, 1986; Clough, 1991 (BOM, v. 2, sec C); Gehrels and others, 1990; Gehrels and others, 1991; Brew and Ford, 1994.

Primary reference: Smith, 1942

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Inspiration Point; Inspiration Mine

Site type: Prospect

ARDF no.: SK073

Latitude: 59.60 **Quadrangle:** SK C-1

Longitude: 135.16

Location description and accuracy:

This location corresponds to map location 52 of Gilbert and others (1990) and the location in Clough (1989 [BOM, v. 2, sec. C]), referred to as the Inspiration Mine. It is in the south-central part of section 23, T. 26 S., R. 60 E. of the Copper River Meridian. However, Cobb (1972 [MF 424]) shows this prospect on the White Pass-Yukon railroad about 0.6 miles south of the Alaska-Canada border and Gilbert and others (1990) located an Inspiration Mine at the 3,400 foot elevation near the west-central edge of section 26, T. 26 S., R. 60 E..

Commodities:

Main: Ag, Pb

Other: Au, Cu, Zn

Ore minerals: Galena

Gangue minerals:

Geologic description:

According to Clough (1989 [BOM, v. 2, sec. C]), the Inspiration Mine was probably discovered in the mid-1920's and was intermittently worked until its abandonment in the late 1930's. An 18-ton trial shipment of ore reportedly assayed 7.65% lead, 6.2% zinc, and 3.05 ounces of silver per ton. Local prospectors apparently restaked the property in 1988. The upper level of workings includes an inclined shaft, a vertical shaft, an open-cut, and a 165-foot adit. There is another adit about 200 feet below the upper level of workings. Mineralization occurs in skarn zones developed along sheared limestone within the Clifton Granite. At this locality, the Clifton Granite is actually a diorite. Mineralization is confined to the skarn zones and is not found in the diorite. This is probably the same as location 52 of Gilbert and others (1990) who described skarn, garnet skarn, diorite, and sheared diorite. Skarn samples contain up to 1,500 ppm copper, 7,200 ppm lead, and 24,000 ppm zinc. U-Pb zircon dates of 48 Ma for the Clifton Granite establish a maximum age for the mineralization (Clough, 1991 [BOM, v. 2, sec. C]; Gilbert and others, 1990).

Alteration:
Skarn peripheral to a diorite intrusion.

Age of mineralization:
U-Pb zircon dates of 48 Ma for the Clifton Granite establish a maximum age for the deposit (Clough, 1991 [BOM, v. 2, sec. C); Gilbert and others, 1990).

Deposit model:
Skarn, contact metasomatic (Cox and Singer, 1986; model 18a or 19a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
18a or 19a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Exploratory work was done annually from about 1926 to 1932 (Berg and Cobb, 1967).

Production notes:
According to Clough (1991 [BOM, v. 2, sec. C], the Inspiration Mine was probably discovered in the mid-1920's and was intermittently worked until its abandonment in the late 1930's. An upper level of workings includes an inclined shaft, a vertical shaft, an open-cut, and a 165-foot adit. There is another adit about 200 feet below the upper level of workings. An 18-ton trial shipment of ore reportedly assayed 7.65% lead, 6.2% zinc, and 3.05 ounces of silver per ton. Local prospectors apparently restaked the property in 1988.

Reserves:

Additional comments:

References:
Smith, 1929; Smith, 1930; Herbert and Race, 1964; Berg and Cobb, 1967; Cobb, 1972 (MF 424); Cobb, 1978 (OF 78-316); Berg, 1984; Clough, 1991 (BOM, v. 2, sec C); Gilbert and others, 1990.

Primary reference: Clough, 1991 (BOM, v. 2, sec. C)

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Kelsall River; Bear Creek; Clear Creek

Site type: Prospects

ARDF no.: SK074

Latitude: 59.54 **Quadrangle:** SK C-3

Longitude: 136.09

Location description and accuracy:
The Kelsall River (formerly known as Bear Creek) is a westerly tributary to the Chilkat River. The site of placer activity was approximately the center of the northern edge of section 17, T. 27 S., R. 55 E. of the Copper River Meridian. This is location 28 of Cobb (1972 [MF 424]).

Commodities:

Main: Au

Other:

Ore minerals:

Gangue minerals:

Geologic description:
Wright (1904 [B 236]) and Eakin (1919) report placer activity at this site but no geologic description or further details are given.

Alteration:

Age of mineralization:
Quaternary placer.

Deposit model:
Placer gold (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: None

Site Status: Inactive

Workings/exploration:

According to Wright (1904 [B 236]), both Bear Creek and its tributary, Clear Creek, which joins Bear Creek 15 miles above its mouth, caused excitement in 1900 but had not been productive as of 1903. Miners had difficulty controlling high water and both quick sand and extreme depth to bedrock were reported. Eakin (1919) reported that extensive prospecting by manual methods failed to develop a workable deposit and the claims were abandoned prior to 1916.

Production notes:

Probably minor if any.

Reserves:

Additional comments:

This prospect is at the western edge of the Alaska, Chilkat Bald Eagle Preserve.

References:

Wright, 1904 (B 225); Wright, 1904 (B 236); Eakin, 1919; Cobb, 1972 (MF 424); Berg, 1984.

Primary reference: Wright, 1904 (B 236)

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Iron Bridge

Site type: Prospect

ARDF no.: SK075

Latitude: 59.55 **Quadrangle:** SK C-3

Longitude: 136.11

Location description and accuracy:
This prospect is approximately 3/4 mile north-northwest of the junction of Nataga Creek and the Kelsall River. It is in the NW1/4, section 8, T. 27 S., R. 55 E. of the Copper River Meridian. It is shown as location 3 by Still and others (1991) and as location 28 by Gilbert and others (1991).

Commodities:

Main: Ag, Au, Cu

Other:

Ore minerals: Malachite, sphalerite

Gangue minerals:

Geologic description:
This prospect consists of malachite-stained silicified rocks that occur in metamorphosed volcanic and sedimentary rocks (Still and others, 1991). Gilbert and others (1991) reported samples that contained up to 0.041 ppm gold, 5.6 ppm silver, and 2,960 ppm copper. There is very little information about this prospect. Mapping to the east by Gilbert and others (1990) suggests that the metamorphosed volcanic and sedimentary rocks described by Still and others (1991) are a roof pendant within Cretaceous to Tertiary intrusive rocks that are part of the Coast Range batholith.

Alteration:

Age of mineralization:
Unknown. The mineralization may be related to Cretaceous to Tertiary plutonic bodies mapped to the east by Gilbert and others (1990).

Deposit model:
Too little information to assign a model type.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Probably inactive

Workings/exploration:

In the 1970's, Mr. Jones, a local prospector, prospected cuts in a newly built logging road. Shallow trenches and stockpiles of malachite-stained silicified rocks were discovered in this thickly overgrown area in 1988 (Still and others, 1991).

Production notes:

Reserves:

Additional comments:

This prospect is immediately west of the Alaska, Chilkat Bald Eagle Preserve.

References:

Gilbert and others, 1990; Gilbert and others, 1991; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (near Kelsall River)

Site type: Prospect

ARDF no.: SK076

Latitude: 59.56 **Quadrangle:** SK C-4

Longitude: 136.14

Location description and accuracy:

According to Eakin (1919), a quartz-sulfide vein is located on a ridge between the Kelsall River (formerly Bear Creek) and Nataga Creek. The approximate location is at an elevation of approximately 1,300 feet in the east-central part of section 1, T. 26 S., R. 54 E. of the Copper River Meridian. It is shown as location 14 by Cobb (1972 [MF-424]) and as location 87 by Berg (1984).

Commodities:

Main: Cu, Zn

Other:

Ore minerals: Chalcopyrite, pyrite, pyrrhotite, sphalerite

Gangue minerals: Quartz

Geologic description:

Eakin (1919) describes the prospect as a vein a few inches wide that contains pyrite, pyrrhotite, chalcopyrite, and sphalerite in quartz gangue. The main portion of the vein is chalcopyrite and pyrrhotite; sphalerite occurs along the vein margins. No additional detail is provided in subsequent references to this prospect (Cobb, 1972 [MF 424]; Cobb, 1978 [OF 78-316]; and Berg, 1984).

Alteration:

Age of mineralization:

Deposit model:

Very little information, but apparently a polymetallic quartz-sulfide vein (Cox and Singer, 1986; model 22c).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

22c

Production Status: None

Site Status: Inactive

Workings/exploration:

No workings are reported and very little information is available. The cursory description by Eakin (1919) appears to have been replicated in subsequent references. The claim (s) is apparently long inactive.

Production notes:

Reserves:

Additional comments:

References:

Eakin, 1919; Cobb, 1972 (MF 424); Cobb, 1978 (OF 78-316); Berg, 1984.

Primary reference: Eakin, 1919

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Nataga Skyline

Site type: Prospect

ARDF no.: SK077

Latitude: 59.61 **Quadrangle:** SK C-4

Longitude: 136.29

Location description and accuracy:

This prospect is approximately 0.2 miles from the Alaska-British Columbia border and about 2.5 miles, N68E of the sharp bend in the border that occurs at Mount Seltat. It is shown as number 1 on sheet 1 of Still and others (1991).

Commodities:

Main: Ag, Cu, Mo, Zn

Other:

Ore minerals: Arsenopyrite, chalcopyrite, ferrimolybdite, galena, magnetite, molybdenite, pyrite, pyrrhotite, scheelite, sphalerite

Gangue minerals: Actinolite, diopside, epidote, garnet, quartz

Geologic description:

Still and others (1991) report that a 40-foot adit and several prospect pits at this site that were driven on sphalerite-rich skarn were probably developed before World War II. An open cut was dug into highly weathered gossan which contains abundant arsenopyrite. The following description is summarized from Still and others (1991) who attribute the information to a personal communication from A. H. Clough (1989).

The mineralization is in a skarn zone of unknown thickness that is at least 300 feet wide and 2,500 feet long. The skarn zone includes gray marble, biotite schist, and garnet-epidote-diopside-actinolite-quartz skarn. Ore minerals include magnetite, sphalerite, galena, chalcopyrite, arsenopyrite, pyrite, pyrrhotite, and scheelite. Granitic rocks of variable composition and texture occur outside of the skarn zone; fine- to medium-grained diorite was the most common. Porphyritic latite dikes and very fine-grained siliceous alaskite were also noted. Southwest of the skarn zone, granular iron-stained granite contained sparse fine-grained molybdenite and ferrimolybdite. The mineralization is scattered throughout the skarn zone; sphalerite is the most common ore mineral. Magnetite and/or pyrrhotite were present in all of the skarn. The actual margins of the skarn zone were not observed.

Still and others (1991) cite the following sample results. A sample of skarn with visible chalcopyrite and galena from a 40-foot adit at the site contained 511 ppm copper and

1,883 ppm zinc. A sample of the gossan with arsenopyrite from the open cut contained 15.7 ppm silver, 4,206 ppm copper, and 17,982 ppm zinc.

The age of the skarn alteration and mineralization is not well established and published detailed geologic mapping is lacking in the vicinity of this prospect. However, Cretaceous to Tertiary intrusive rocks mapped to the east by Gilbert and others (1990) suggest a similar age for this mineralization.

Alteration:
Skarn.

Age of mineralization:
Probably Cretaceous or Tertiary based on the ages of intrusive rocks mapped to the east by Gilbert and others (1990).

Deposit model:
Polymetallic skarn (Cox and Singer, 1986; model 18b or 18c).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
18b or 18c

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:
A 40-foot adit, several prospect pits, and an open cut were developed, probably before World War II (Still and others, 1991).

Production notes:

Reserves:

Additional comments:

References:
Gilbert and others, 1990; Still and others, 1991.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

Site name(s): Unnamed (near Mount Seltat)

Site type: Occurrence

ARDF no.: SK078

Latitude: 59.60 **Quadrangle:** SK C-4

Longitude: 136.33

Location description and accuracy:

This occurrence is about 0.7 miles east of the summit of Mount Seltat along a ridge that extends eastward from the summit. The location is approximate as the area of mineralization is described as occurring in 'talus piles that drain the north and south sides of the rugged eastern ridge of Mount Seltat.' (Still and others, 1991). It is shown as number 2 on sheet 1 by Still and others (1991).

Commodities:

Main: Ag, Cu, Pb, W, Zn

Other: Au

Ore minerals: Chalcopyrite, galena, magnetite, pyrrhotite, sphalerite

Gangue minerals:

Geologic description:

Ore minerals are found in talus piles along the north and south sides of a rugged ridge that extends to the east from Mount Seltat. The mineralized talus is probably derived from brown-black manganese-stained bands that crop out between elevations of 4,000 feet and 6,000 feet on the ridge. Gilbert and others (1991) and Still and others (1991) report that float and rubblecrop samples of skarn or massive sulfides contained up to 0.137 ppm gold, 173.1 ppm silver, 4.13% zinc, 8,400 ppm copper, 2.6% lead, and 1,285 ppm tungsten. Cretaceous to Tertiary intrusive rocks mapped to the east by Gilbert and others (1990) suggest a similar age for this mineralization and alteration.

Alteration:

Skarn.

Age of mineralization:

Probably Cretaceous or Tertiary based on the age of intrusive rocks mapped to the east by Gilbert and others (1990).

Deposit model:

Very little information. Probably a skarn (Cox and Singer, 1986; model 18b or 18c).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
18b or 18c

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:
Gilbert and others, 1990; Gilbert and others, 1991; Still, 1991 (BOM, v. 2, sec. A); Still and others, 1991.

Primary reference: Still and others, 1991

Reporter(s): T.C. Crafford (T. Crafford & Associates, Anchorage)

Last report date: 02/04/2001

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